

# **TOWERJAZZ**

*The Global Specialty Foundry Leader*

*2016 Annual Report*

Corporate and Business Overview

A hand in a blue suit sleeve holds a glowing yellow orb. The background features a cityscape on the left and various digital patterns, including binary code and circuit-like lines, on the right. The overall color palette is blue and yellow.

# 2016

**A record year for TowerJazz, on all fronts.**

With a **proven business model** and **technology leadership** within multiple **growth markets**, we are the **fastest growing foundry** in the world with **strong business, operational and financial performance**.

*Moving into*

**2017** 

# Table of Contents

Letters to Shareholders			Vision Mission Values	Leadership Team
		2-5	6	7
Corporate Overview	Financial Overview		Global Operations	
		8, 9		12, 13
Technology Leadership	Thriving in the IoT Revolution	Radio Frequency & High Performance Analog	CMOS Image Sensor	
14	15	16, 17	18, 19	
Power Management & Mixed-Signal/CMOS	Transfer, Optimization & development Process Services (TOPS)		Research and Development	
20, 21	22, 23		24, 25	
Business Sustainability & Social Responsibility	2016 Q4 and Fiscal Year Financial Results Press Release			
26, 27				
				28-37

**TowerJazz continues to focus on long term relationships with customers and partners, as well as gaining new and exciting business.**

The Company is **well positioned** to answer current and future needs **driving advanced technology** in the world—and we believe **another meaningful year** is ahead for us.



## Dearest Shareholders and Friends,

It is with excitement and a high level of satisfaction that I have the opportunity to reflect upon our achievements as shown in our 2016 results. We are the leading global analog foundry, maintaining significant customer engagements with the top-tier players in our chosen served markets. With advanced technical offerings, market leadership, and an annual revenue of \$1.25 billion, we have achieved significant growth by any measure, for any company, in any industry.

While enjoying the fruits of our success, looking ahead we are not sitting on our laurels. We stay focused on pushing TowerJazz toward further growth. I see this Company with very promising potential ahead which is yet to be fully realized, with a team that is entirely capable of going from strength to strength; attaining an even higher level of success.

Our goal remains to continue our proven successful business model, driving analog leadership with low-cost capacity expansion, resulting in strong increasing revenue with proportional growth in margins, profit and free cash flow. We will always maintain a constant eye toward creating and realizing value for you, our very loyal shareholders.

I wholeheartedly congratulate Russell and his leadership team, as well as all the hardworking employees of TowerJazz, for their efforts, activities and accomplishments of multiple years resulting in the record year we have just completed in 2016. I very much look forward to another momentous year with great achievements.


Sincerely,  
Amir Elstein, Chairman of the Board



## BOARD OF DIRECTORS

- Amir Elstein** Chairman of the Board
- Alex Kornhauser** Chairman of the Audit Committee, Director
- Ilan Flato** Chairman of the Compensation Committee, Director
- Iris Avner** Director
- Yoav Z. Chelouche** Director
- Russell Ellwanger** Director
- Dana Gross** Director
- Rami Guzman** Director
- Kalman Kaufman** Director
- Rony Ross** Director



A person wearing a white lab coat, a white hood, safety glasses, and a clear face shield is working in a laboratory. They are wearing white gloves and are positioned at a workstation with a computer keyboard and mouse. The background shows various pieces of laboratory equipment and shelving.

"We stay focused on pushing TowerJazz toward further growth. I see this Company with very promising potential ahead which is yet to be fully realized, with a team that is entirely capable of going from strength to strength; attaining an even higher level of success."

## Dear Shareholders, Customers, Partners and Employees,

TowerJazz has continued its high growth rate (30% year over year) and top position as an analog pure play foundry provider, with multiple geographic sites, advanced technology diversity and a large and growing customer base. We continue our focus to strengthen our global corporate culture by proliferating the best core competencies of each of our specific sites throughout the Company and to enhance our capabilities through internal and external benchmarking with associated concrete operational flow and process development, and financial metric activities.

### THE NUMBERS

2016 was an exceptional year, with the best business and financial performance in the history of the Company. We continued to establish our position as the global specialty foundry leader, while presenting another year of record revenues having reached \$1.25 billion, record EBITDA of over \$365 million and record net profit of over \$200 million; reflecting value creation in increased margin percentages for the preceding indices. This performance generated approximately \$120 million in free cash flow; an internal source to support additional opportunities and growth initiatives.

This performance was enabled through the realization of our successful analog business model. We remained focused on providing best in class specialty technology offerings, by providing the right platforms to support the trends that are now driving the world. We increased our competitive advantage within existing and new markets, by being responsive to present and future needs of our diversified customer base.

### BEYOND THE NUMBERS

Our vision has not changed since 2005, when I joined Tower as CEO. Our strategies and tactics, however, have changed multiple times in response to customer needs, market changes and our Company's ever increasing capabilities. U.S. President John F. Kennedy stated, "Leadership and learning are indispensable to each other." As long as we continue to learn from our customers and the market itself, and have the courage and confidence to make big and quick changes, our future will remain strong. And this is what we intend to do.

"As long as we continue to learn from our customers and the market itself, and have the courage and confidence to make big and quick changes, our future will remain strong. And this is what we intend to do."

### The Fulfillment of Change

TowerJazz today is a completely different company than it was just a decade ago. This is a result of a continual process of market evaluation and corporate introspection that included along the years many cycles of learning and multiple "junctions of change." We commit to embrace change as the enabler for strength and growth.

### Aligning Want, Should and Is, and Looking in the Mirror

Self-actualization occurs when the individual's wants strongly overlap with that which one should be doing, and is evidenced in everyday life behaviors. Often cycles of learning to attain self-actualization require input from a trusted and caring third party (a loving spouse or friend). The language of a person's actions may differ vastly from his or her intent. A third party can hold up a mirror and help translate intentions into the appropriate behavioral language.

### Vision (Purpose), Mission (Wants), Values (Shoulds), Performance (Is)

An enterprise enters "prime" when these same three spaces—"Want," "Should" and "Is"—strongly overlap. When an enterprise proceeds without vision, or with a vision that is not aligned to a market need, or one that is incompatible with its actions, it is ignorant of its purpose and "doom" is written on its brow. It will fail. Once the purpose is defined and validated, the mission (wants) and values (shoulds) are established and promoted.

Customers are the best third party input of how well the enterprise has aligned the values (shoulds) with the mission (wants) into company performance (the "is"). The overlap must continually be checked and adjusted by regular customer feedback and honest introspection with the integrity and courage to make needed changes at all levels and in all activities.

We have realized strong growth at TowerJazz in all aspects of our business and financials. We believe this to be a good indicator of progress towards prime. Our present and future success is fully dependent upon our customers' and partners' inputs and our ability to quickly address them. We are committed to continuous evaluations of our "want/should/is" state and drive actions towards full overlap.



## **DRIVERS FOR SUCCESS: A Collective Culture of Innovation, Excellence and Trust**

### **An Environment of Innovation**

If innovation is simply restricted to technological innovation, it is insufficient. Innovation has to drive through all activities, through all levels of the Company, and then technological innovation can really take off. We align with our lead customers in specific areas in order to know what their roadmap requirements are and, before the need arises, to have the building blocks available while bringing out solutions that are of value to them. In this way we are successful in attracting and becoming partners with customers that are leaders within their field.

Our innovation, then, is really driven to build trust with our customers and allow them to open up to us on their multi-generation roadmap. We can then work on solutions from a processing standpoint on platform development that gives them advantage on time to market.

### **Pursuit of Excellence**

It is our goal to provide the tools and promote an environment that impassions our worldwide employee base to achieve excellence, e.g., first time success for our customers. In all of our business units we continually make strides to expand our leading capabilities.

We aim to build trust and add value to our customers, partners, vendors and employees. We focus on application driven research developments that differentiate the Company in the specialty foundry market and provide excellence at both national and international levels.

"It is our goal to provide the tools and promote an environment that impassions our worldwide employee base to achieve excellence."

### **We do what we say we will do**

We work diligently to achieve the highest quality performance through cohesive, concerted efforts of efficiency and align our tools, skillsets and craft to the highest level of production.

One of the major benefits that comes with maintaining global facilities is the possibility to use best practices among our different sites, select the best ones, and improve overall efficiency and effectiveness. The Quality Team has taken the lead on defining methodologies that will benefit from this integration. Japanese culture inherited from TPSCo, and most importantly Japanese view of quality, provides an excellent opportunity to improve overall quality across the organization. We are greatly blessed to have TPSCo within our corporate family. We, as an entity, have gained and continue to benefit as we learn, understand and implement more of the Japanese relationship in the workplace and of their commitment to a quality standard intrinsically tied to efficiency.

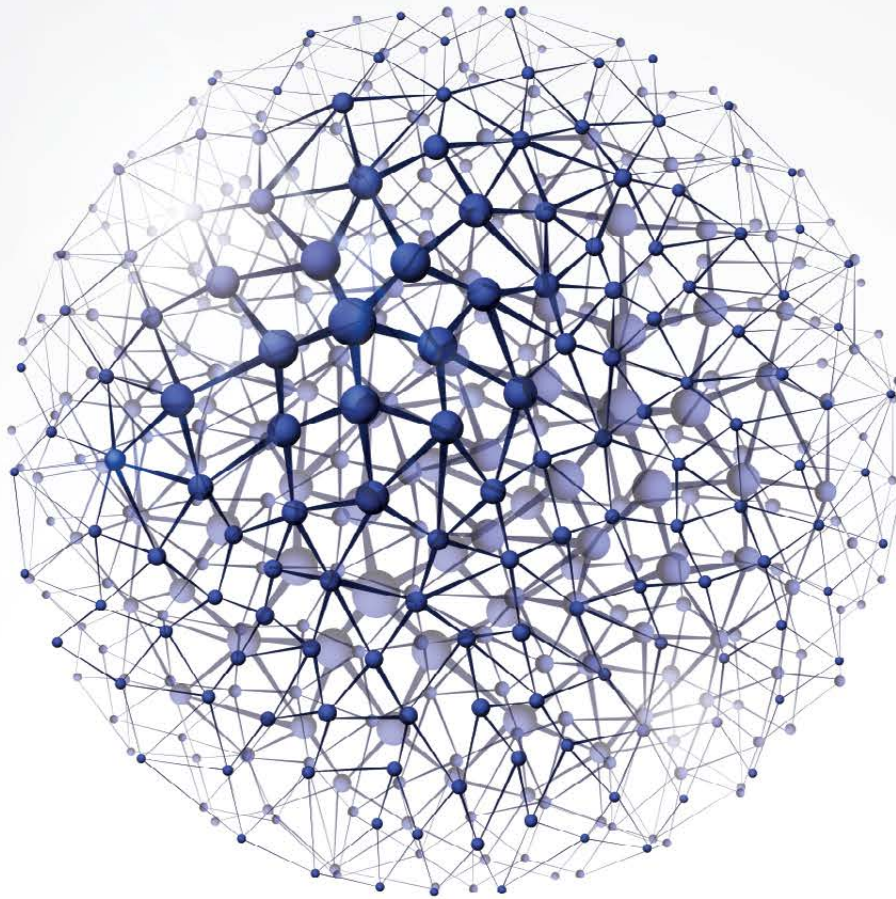
Based on that, we rooted the motto of "We do what we say we will do" across all of our sites, while advancing quality initiatives throughout the Company that are aimed at meeting customer needs and improving overall quality and efficiency.

## **WHAT IS AHEAD FOR US**

As we move into 2017 and beyond, we are in a tremendous position to continue our success. By playing in the right markets with the right technologies, we will ardently pursue future business opportunities. Our financial position, combined with best in class technical performance and an expanding operational footprint to fulfill our growing customer demand, should continue our path of value creation.

Sincerely,  
Russell Ellwanger  
TowerJazz Chief Executive Officer  
TPSCo Chairman of the Board





## Vision

To be the world leader in specialty foundry solutions as measured by our customers, employees and investors.

## Mission

TowerJazz's mission is to bring to market specialty foundry solutions that provide unique value to our customers by attentively listening to and proactively providing for their needs, through attracting and retaining the best global talent to serve them.

## Corporate Values

- Embrace a Customer Centric Mentality
- Foster a Culture Built on Mutual Trust and Respect
- Demand Quality and Excellence in Everything We Do
- Exemplify a Data Driven and Results-oriented Mindset
- Emphasize Collaboration and Innovation
- Focus on the Right Knowledge, Skills and Attitude



# Leadership Team



**Amir Elstein**  
Chairman of the Board



**Russell Ellwanger**  
Chief Executive Officer, TowerJazz  
Chairman, TPSCo

## Executive Management



**Dr. Itzhak Edrei**  
President



**Oren Shirazi**  
Chief Financial Officer  
Senior Vice President of Finance



**Rafi Mor**  
Chief Operating Officer



**Yossi Netzer**  
Senior Vice President,  
Corporate Planning



**Dalit Dahan**  
Senior Vice President of Human Resources & Information Technology



**Nati Somekh**  
Senior Vice President, Chief Legal Officer & Corporate Secretary



**Ilan Rabinovich**  
Vice President of Quality & Reliability & Vice President of Customer Support

## Business Unit General Management



**Dr. Marco Racanelli**  
Senior Vice President & General Manager of RF/HPA Business Group  
General Manager of US Aerospace & Defense Business Group, Newport Beach Site Manager



**Dr. Avi Strum**  
Senior Vice President & General Manager, CMOS Image Sensor Business Unit



**Zmira Shternfeld-Lavie**  
Senior Vice President of Process Engineering R&D  
General Manager of TOPS



**Shimon Greenberg**  
Vice President of Power Management & Mixed-Signal/CMOS Business Unit



**Dr. Yakov Roizin**  
Fellow & Director of Emerging Technologies



**Dr. David Howard**  
Fellow & Executive Director



**Dr. Gurvinder Jolly**  
Fellow & Vice President, Newport Beach Fab Process Engineering, US Integration

## Technical Fellows

## TPSCo Key Executives



**Guy Eristoff**  
Chief Executive Officer



**Yoshihisa Nagano**  
Chief Operating Officer



**Tomoyuki Sasaki**  
Chief Technology Officer, Director of Process Technology Center



**Amit Mappa**  
Chief Financial Officer

## Decades of Experience

The Management teams of TowerJazz and TPSCo bring together many decades of technology and leadership experience, and by utilizing the best core-competencies across the entire organization, have created a leading global company that serves and will grow the analog foundry space as no existing single foundry company can.

# *The Global Specialty Foundry Leader*

---

Over the past several years, TowerJazz has presented record business and financial results while partnering for its customers' success. As the Company moves forward, it continues with a strong outlook for growth through a commitment to performance and manufacturing excellence.

TowerJazz, the global specialty foundry leader, manufactures advanced analog integrated circuits for a diversified and strong customer base with more than 300 customers worldwide in growing markets such as consumer, automotive, medical, industrial, and aerospace & defense, among others. Deeply rooted in proven technologies, the Company continues to drive innovation within silicon rather than by pure technological nodal shrinkage. TowerJazz specializes in customized analog solutions for differentiated products and offers leading edge specialty process technologies including Radio Frequency (RF), High Performance Analog (HPA), integrated Power Management, CMOS Image Sensors (CIS), Mixed-Signal/CMOS, and Micro-Electro-Mechanical Systems (MEMS) capabilities. In addition, TowerJazz provides world-class design enablement and Transfer Optimization and development Process Services (TOPS).

TowerJazz is geographically and culturally diverse with broad and deep experience in manufacturing many different types of technologies. For global capacity assurance and operational flexibility, TowerJazz operates seven manufacturing facilities in three

geographic locations, providing over 2.3 million wafers per year: two fabs (150mm and 200mm) located in Migdal Haemek, Israel, one fab (200mm) located in Newport Beach, California, USA, one fab located in San Antonio, Texas, USA and three additional fabs (two 200mm and one 300mm) through TowerJazz Panasonic Semiconductor Co., Ltd. (TPSCo) located in the Hokuriku region of Japan.

TowerJazz pursues excellence in all aspects of its business by maintaining industry expertise and cultivating a collective culture of quality, innovation, and trust. With constant growth throughout the past years, and while continuously strengthening its margins and balance sheet, the Company was able to create a strong financial foundation to pursue its goals for the future.

As TowerJazz expands its capabilities, manufacturing capacity and global reach, it continues to build on its market and technology leadership to maintain the Company's position as the global specialty foundry leader.





## TowerJazz at a Glance

---



### TECHNOLOGY GROWTH

The fastest growing foundry in the world by providing a wide range of advanced specialty analog technology offerings for the right growth markets.



### STRONG FINANCIALS

Continuous revenue growth with strong margins and sustainable model for growing net profit



### CAPACITY ASSURANCE

Seven worldwide manufacturing facilities providing capacity assurance, operational flexibility, and dual-sourcing capabilities with available capacity of over 2.3 million wafers per year



### PROMINENT CUSTOMER BASE

Targeting the right customers, the leaders in their respective markets, to continue growing a base of over 300 customers. Aligning with customers' technology roadmaps to ensure long-term business success.

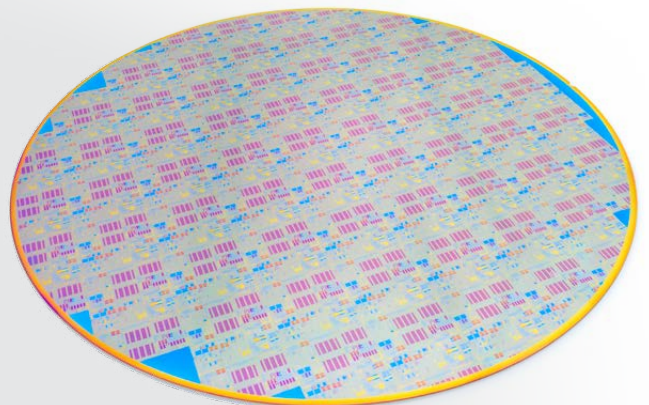


### SKILLED EMPLOYEES

Over 4,500 worldwide highly talented and skilled employees with broad technology knowledge and deep industry expertise



We pursue excellence in all aspects of our business by maintaining industry expertise and cultivating a collective culture of quality, innovation, and trust.





# Continuous Execution and Growth

In 2016, TowerJazz achieved outstanding financial results, creating the strongest financial position in its history.

Throughout 2016, TowerJazz implemented its successful analog business model - an optimized cost structure, utilizing its global strength with low cost capacity investments. Efforts to maximize the revenue mix with cross qualifications across its worldwide facilities and the resultant higher levels of utilization enabled an ongoing increase in profitability.

The aforementioned provided TowerJazz with a strong balance sheet. Shareholders' equity as of year-end 2016 reached a record of \$683 million, an increase of 77% as compared to \$386 million as of December 31, 2015. Current ratio (current assets over liabilities) increased to 2.82 times, as compared to 2.12X as of December 31, 2015. Finally, the Company significantly strengthened its cash balance, reaching positive cash balance, net of debt, of \$37 million, as compared to a negative cash balance, net of debt, of \$(105) million at the end of 2015.

Thus, ending 2016, TowerJazz has never been better positioned financially. The Company's financial strength

and flexibility, combined with a proven business model, provides the best atmosphere for continued performance and growth in the foreseeable future.

## MAIN FINANCIAL PARAMETERS SUMMARY

All data in millions, except per share data

	2016	2015	2014
Total Revenue	\$1,250	\$961	\$828
EBITDA	\$367	\$248	\$154
Net Profit (Loss)	\$204	(\$30)	\$4
Free Cash Flow*	\$327	\$170	\$98
Diluted Earnings (Loss) Per Share	\$2.33	\$(0.40)	\$0.08
Cash Balance Net of Debt	\$37	\$(105)	(318)

## Main Financial Achievements

### RECORD REVENUE

Record full year revenues of \$1.25 billion, up 30% year-over-year

### RECORD EBITDA

Record \$367 million in EBITDA, reflecting 29% EBITDA margins and up 48% year-over-year

### MARGINS INCREASE

Increase in gross and operating margins — gross profit up from \$205 million to \$303 million; operating profit up from \$82 million to \$175 million

### RECORD NET PROFIT

Record net profit of \$204 million and net margin of 16% as compared to a net loss of \$30 million in 2015

### CASH GENERATION

End of year net cash balance was \$389 million as compared to \$206 million at the end of 2015, while generating free cash flow of \$118 million in 2016 and \$327 million of cash from operations

# TOWERJAZZ

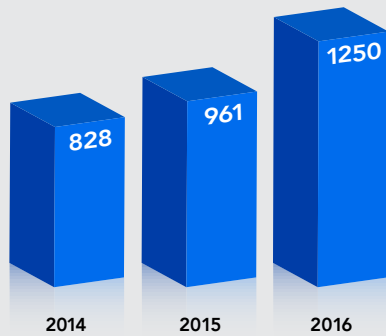
The Global Specialty Pharmacy Leader



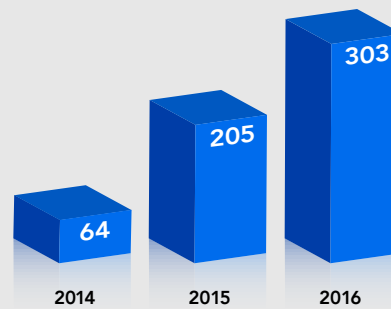
TowerJazz's Leadership Team Ringing the Nasdaq Stock Market Opening Bell - November 2016

## 2016 *A Record Year*

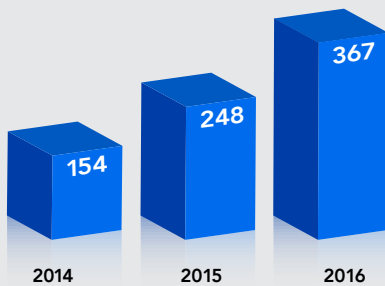
REVENUES [\$ Millions]



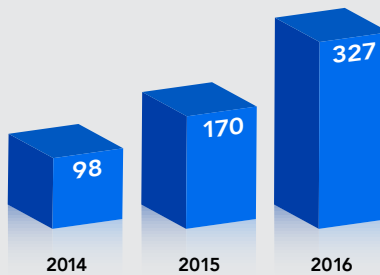
GROSS PROFIT [\$ Millions]



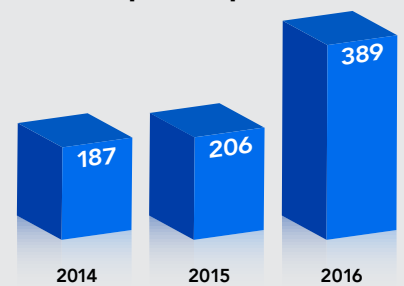
EBITDA [\$ Millions]



CASH FROM OPERATIONS  
[\$ Millions]



CASH CLOSING BALANCE  
[\$ Millions]



“We remain focused on continuous profitable growth, together with a strong balance sheet and cash creation model, creating value to both our customers and shareholders, with careful implementation and execution of our successful business strategy.”

Oren Shirazi  
Chief Financial Officer

# Manufacturing Excellence

---

TowerJazz drives operational excellence to reduce complexity, maximize transparency, shorten lead times and optimize the cost of operations to satisfy all its customers' needs.

As TowerJazz grows and matures its global operations and presence, it is critical to leverage worldwide "bests" corporate-wide to provide value-add capabilities that allow the Company to exceed customer expectations. Therefore, the Company has built global teams with members from all its fabs in Japan, Israel and the US, in major areas of operations such as integration, process engineering, industrial engineering and equipment.

TowerJazz continues to work closely with its customers to meet their growing capacity needs while focusing on new enhancements to achieve the highest standard of manufacturing quality. In the last three years, the Company has invested significantly in expanding capacity in its existing fabs in Japan, Israel and the US. In 2016, TowerJazz also completed the acquisition of the fab in San Antonio, Texas creating a total capacity of >2.3M wafers starts per year (8" equivalent).

TowerJazz strives to utilize all its available capacity in order to better serve its current and forecasted strong customer demand, and to provide flexibility to its customers. Therefore, the Company cross-qualified major specialized technologies such as Power, CMOS 0.16, and radio frequency silicon-on-insulator (RF SOI) at its TPSCo fabs in Japan and its San Antonio fab in Texas. In Q1 2017, less than one year from the acquisition, the San Antonio fab is already expected to start ramping significant foundry business on qualified process flows.

TowerJazz is leading the analog foundries by providing its customers with the highest quality products and services, as only lasting customer satisfaction will guarantee TowerJazz success on a long-term basis. TowerJazz is continuously adding process capabilities into its fabs to support additional advanced and specialized technologies such as RF SOI, MEMS, GaN, CMOS image sensors and power management.



“TowerJazz continues to work closely with our customers to meet their growing capacity needs. We strive to excel in timely delivery of quality products to assure customer success in their individual markets.”

**Rafi Mor**  
Chief Operating Officer





## Worldwide Manufacturing Capabilities

TowerJazz operates seven manufacturing facilities in three geographic regions, providing global capacity assurance and flexibility: two fabs located in Migdal Haemek, Israel, one fab in Newport Beach, California, USA, one fab in San Antonio, Texas, USA, and three factories in the Hokuriku region of Japan through TowerJazz Panasonic Semiconductor Company (TPSCo), a company established with Panasonic in March 2014.



### MIGDAL HAEMEK, ISRAEL

- 6" (150mm)
- CMOS, CIS, Power, Power Discrete
- 1 $\mu$ m to 0.35 $\mu$ m



### MIGDAL HAEMEK, ISRAEL

- 8" (200mm)
- CMOS, CIS, Power, Power Discrete, MEMS
- 0.18 $\mu$ m to 0.13 $\mu$ m



### NEWPORT BEACH, CA, USA

- 8" (200mm)
- CMOS, CIS, MEMS, RF Analog
- 0.18 $\mu$ m to 0.13 $\mu$ m



### SAN ANTONIO, TX, USA

- 8" (200mm)
- Power, RF Analog
- 0.18 $\mu$ m



### ARAI, JAPAN

- 8" (200mm)
- Analog, CIS
- 0.13 $\mu$ m to 0.11 $\mu$ m



### TONAMI, JAPAN

- 8" (200mm)
- Power, Power Discrete, NVM, CCD
- 0.35 $\mu$ m to 0.15 $\mu$ m



### UOZU, JAPAN

- 12" (300mm)
- CMOS, CIS, RF
- 65nm to 45nm

*Focus for*  
**2017**

2017 will be focused on continuing to provide the utmost in quality and efficiency in the seven worldwide TowerJazz manufacturing sites. TowerJazz will expand its broad capabilities to optimize capacity utilization and flexibility, enabling the Company to increase its overall wafer shipments and serve its ever-increasing customer demand.

# Offering the Right Specialized Analog Solutions



"We continue to maintain our industry and technology leadership by targeting the right growing markets, working with the leading companies in their respective space, and offering the unique, differentiated and advanced specialized analog technologies.

The availability of 300mm 65nm technology has provided continuation of our technology roadmap and additional served markets for our business units, including image sensors (e.g. DSLR and security) and RF (e.g. breakthrough technology for next-generation smartphones and IoT applications).

By working very closely with our customers on R&D and innovation, we provide value creation in development of their next generation products and future growth for their business as well as for TowerJazz."

Dr. Itzhak Edrei, President



 <b>RF &amp; HIGH PERFORMANCE ANALOG</b>	 <b>POWER MANAGEMENT &amp; MIXED-SIGNAL CMOS</b>	 <b>CMOS IMAGE SENSOR</b>	 <b>AEROSPACE &amp; DEFENSE</b>	 <b>TOPS</b> Transfer Optimization & development Process Services	
 <b>IMAGE SENSOR</b>	 <b>DISCRETE</b>	 <b>ANALOG RF/HPA</b>	 <b>NON-VOLATILE MEMORY (NVM)</b>	 <b>POWER PMIC/BMIC</b>	 <b>AUTOMOTIVE &amp; INDUSTRIAL</b>



# *Thriving in the IoT Revolution*

---

---

## Market Megatrends are driving rapid growth in analog/mixed-signal applications

IC designs for connected, smart devices require high reliability and low power foundry solutions creating new business opportunities for TowerJazz and our customers.

TowerJazz is well positioned in the fastest growing markets with long term customer relationships and roadmap alignment.

 <p><b>GREEN</b> EVERYTHING</p>	 <p><b>WIRELESS</b> EVERYTHING</p>	 <p><b>SMART</b> EVERYTHING</p>
<p>Energy Efficiency</p>	<p>Seamless Connectivity</p>	<p>Embedded Systems</p>
<p>Power Management</p>	<p>RF &amp; High-Performance Analog</p>	<p>Sensors (machine vision, ambient parameters, etc.)</p>



# *Enabling a New Era of Communication*

TowerJazz's advanced RF and High Performance Analog (HPA) technologies address the exponential growth in mobile and infrastructure markets.

TowerJazz's RF/HPA business unit (BU) serves two primary end-markets: mobile and infrastructure. For each market, its technology offers best-in-class performance together with accurate models and design kits that enable its customers to bring new, high-performance products to market faster than with competing solutions.

For the mobile market, TowerJazz offers RF SOI for best-in-class Ron-Coff figure of merit (sub-100fs), which results in lower insertion loss for RF switches leading to improved reception, faster data rates, and longer battery life for handsets and other mobile devices. In addition, TowerJazz's SiGe offering is used for both receive (low noise amplifiers) and transmit (power amplifiers) functions in handsets and provides the best silicon-based performance (lowest noise figure for receivers and best power efficiency for silicon-based power amplifiers) enabling higher data-rates, better GPS reception, and longer battery life in handsets and other mobile devices. Both LNA and PAs are in high volume production and new generations of technology are being rolled out.

For the infrastructure market, TowerJazz's industry leadership in high performance SiGe continues with the announcement this year of S4 with 300GHz Fmax complementing its production H3 process used for 10 to 100GB/s optical fiber transceivers and mmWave radar.

## **ACHIEVEMENTS IN 2016:**

- Continued growth of revenue in all segments—both SOI and SiGe technology segments as well as mobile and infrastructure market segments grew year-over-year in 2016.
- Successfully transferred its most popular RF SOI platforms to its newly acquired facility in San Antonio to enable more capacity for customers in this growing market.
- Announced production ramp of its SiGe PA process with Skyworks. The process enables a front-end-module single chip with power amplifier, low-noise-amplifier, switch, logic and power management functions that can all be integrated on a single die.
- Announced its latest addition to the "SiGe Terabit Platform" with S4 at 300GHz Fmax providing high-speed SiGe customers a next generation platform to design higher data-rate products.

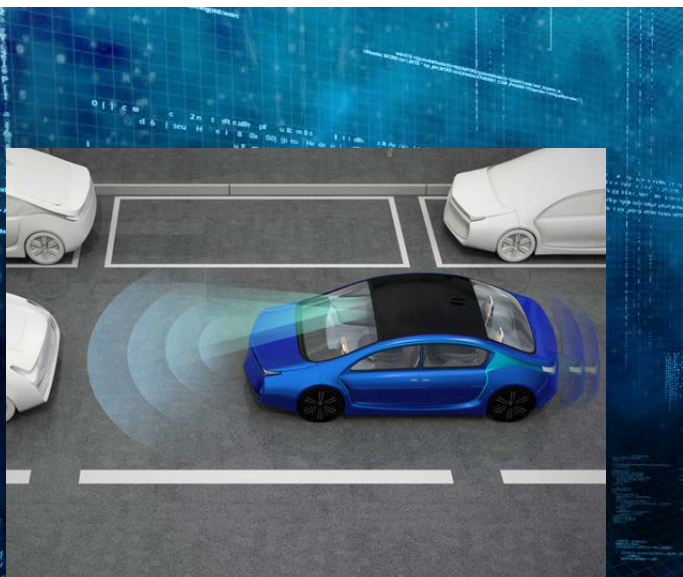


"In the last several years our RF business has grown largely by providing technology that enables higher data rates in handsets, data centers, and networks.

As we look forward, we see the proliferation of IoT devices, the advent of 5G cellular service and the promise of autonomous vehicles augmenting our RF business with additional exiting opportunities for growth and we are investing heavily in technology that provides our customers a strong advantage in these new areas."

**Dr. Marco Racanelli**

Senior Vice President & General Manager of  
RF/High Performance Analog Business Group







## Main Applications



### MOBILE DEVICES

In the mobile market, TowerJazz enables front-end-module components such as RF Switches (RF SOI), low-noise amplifiers (SiGe or RF SOI) and power amplifiers (SiGe). The Company has a large market share in these applications and serves all major mobile platforms through its many customers. The mobile handset market continues to grow but the front-end-module market is growing even faster as content per handset is growing rapidly to support new higher data rates with 4G LTE, carrier aggregation, diversity receive and soon MIMO and 5G.



### INFRASTRUCTURE

For the infrastructure market, TowerJazz technology enables receiver/transmitter fiber optic components such as trans-impedance-amplifiers (TIA), laser drivers (LD), and clock-data-recovery circuits (CDRs). TowerJazz has a large market share (estimated at larger than 60%) serving such components and demand continues to grow fueled by the exploding need for data traffic in data centers, cloud computing and network backbone as well as fiber-to-the-home networks. A new application of the same HP SiGe technology is automotive radar for collision avoidance and ultimately autonomous vehicles.

*Focus for*  
**2017**

The main growth drivers for the TowerJazz RF/HPA BU continue to be front-end-modules for handsets and other mobile devices, front-end components for fiber-optic data connections in data centers and networks, as well as automotive collision avoidance and other radar applications. These markets drive growth in both its RF SOI and SiGe technology platforms.

TowerJazz is well positioned for continued success in the RF market with industry-leading process technology, strong relationships with Tier 1 customers to drive the Company's roadmap, and a demonstrated ability to bring customers to market quickly with first-pass success and ramp to high volumes in multiple factories – a combination that cannot be easily duplicated in the foundry industry.

# *New High-end Technology Targets Rising Demands*

---

TowerJazz primarily serves six different market segments within the CMOS Image Sensor (CIS) general market: automotive, machine vision, high-end photography and cinematography, dental and medical X-ray, 3D and AR/VR (augmented reality and virtual reality) and security.

TowerJazz provides best in class pixel technology, tailored for each specific sensor application area such as:

- Very high dynamic range pixels for the automotive industry
- Unique low noise and extremely small global shutter pixels for the fast increasing industrial vision market
- Extremely low dark current, low hot pixel count and low noise pixels for the high end photography and cinematography market
- Large stitched pixels for medical and dental X-ray
- Near Infrared sensitive global shutter small pixels for 3D and AR/VR applications
- Very small, yet highly sensitive pixels for the fast growing security market.

In addition, TowerJazz tailors the pixel layout as well as the process parameters per each customer's requirement, providing silicon proven, state of the art pixels.

## **ACHIEVEMENTS IN 2016:**

TowerJazz has developed the smallest in the world, state of the art, 2.8 micron global shutter pixel to support the next generation industrial and machine vision sensor families for its customers. This is going to ramp to production in the second half of 2017.

TowerJazz grew its market share substantially in the past year, especially evident in the medical and industrial market segments, by ramping to volume production customers' new devices.

Through great collaboration with TowerJazz, PIXELPLUS brought its SoC HD security sensor into mass production. New higher resolution sensors are in final development stages, slated for mass production in 2017.



"Focusing on high end value-add CIS technology has proven itself. Our served markets are those where technology and performance speak — customers appreciate our excellent technology performance, keeping us, as well as them, in a leading position in the market segments we serve."

**Dr. Avi Strum**

Senior Vice President & General Manager,  
CMOS Image Sensor Business Unit



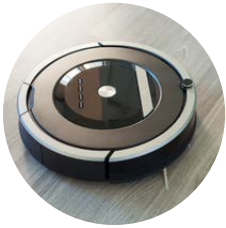


## Main Applications



### AUTOMOTIVE

The automotive market is growing very fast, driven by ADAS (Advanced Driver Assistant Systems) and autonomous driving requirements. Expectations are for six to eight cameras per vehicle. These are not only high dynamic range CMOS sensor based cameras, but also SPAD based LIDARs used mainly for autonomous driving cars. TowerJazz is well-positioned to meet the expanding needs of this market.



### MACHINE VISION

Driven by the need for automation of factories, especially in the food industry, as well as household intelligent robots (like vacuum cleaners), 2D barcode readers, traffic control cameras and many more, the machine vision market is growing fast. The common denominator of all these applications is the need for a very fast, high frame rate, global shutter operation. TowerJazz is providing technology and high volume manufacturing capabilities to the leaders in this area, such as e2v, CMOSIS, On Semi and many more.



### HIGH-END PHOTOGRAPHY AND CINEMATOGRAPHY

TowerJazz already has a leading position in the cinematography camera market, where a huge amount of films, including Oscar award winners, were shot with a sensor produced by TowerJazz. In addition, the Company is increasing very fast its market share in the still photography area of DSLR and Mirror Less (ILC) cameras, based on its excellent state of the art TPSCo technology on 12" wafers, 65nm process node.



### MEDICAL AND DENTAL X-RAY MARKET

TowerJazz is growing its market share substantially working with the leaders in this area. The market is shifting from amorphous silicon to CMOS technology and the Company is taking advantage of this by using its unique stitched technology for up to one die per wafer (150mm x 125mm) that can be tiled into large panels by its customers. TowerJazz is now offering this technology also on 12" wafers in its TPSCo facility in Uozu, Japan.



### 3D AND AR/VR (AUGMENTED REALITY/VIRTUAL REALITY)

The 3D and AR/VR areas are extremely fast growing. The need for this technology can be seen all over the place, from Google glasses to Intel's RealSense. The technology requirements are for very high sensitivity to Near Infrared as well as very low power. TowerJazz is working in this area with the leaders in this industry.



### SECURITY

The need for cameras at every street corner and in every building is increasing very fast and the momentum of moving from VGA cameras to HD, Full HD and QHD (4Mp) is very high. TowerJazz uses its state of the art pixel technology in its 12" Uozu, Japan facility to provide the best security sensors in the market. The Company sees very fast growth of this market, working together with Korean leader, PIXELPLUS.

*Focus for*  
**2017**

TowerJazz witnessed several large merger and acquisitions in the sensor market between its customers which strengthens the Company's position even further as TowerJazz is the major or sole supplier for these customers.

Dramatic growth is expected in all market segments, especially in the medical X-ray market and the machine vision market. In addition, TowerJazz sees a general growing demand for cameras everywhere.

# *Achieving Higher Power Efficiency*

---

TowerJazz's advanced Power platforms provide wide application coverage in multiple growing end markets such as the Internet of Things (IoT), wearables, mobile, laptops, wireless chargers, drones, home appliance products, automotive and industrial.

TowerJazz closely collaborates with its leading customers to define and develop the next generation of its platforms and devices. These collaborations yield very high probabilities that development activities will move to high volume production and enable the Company's partners early access to its future offerings with specific features that meet their precise requirements. This mode of operation has already yielded developments of new advanced devices such as high frequency LDMOS and 5V cost-effective isolations, all for the high efficiency switched regulator market.

Based on TowerJazz's wide offering, the Company is achieving higher power efficiency in various markets. For switched regulators and motor drivers markets, TowerJazz offers a leading edge R<sub>dson</sub> and fast switching transistors including best in class isolations. These ICs are used today in consumer products such as drones, laptops and home appliance products. For the market of wireless chargers and battery management, TowerJazz offers the inclusion of non-volatile memories and digital 5V and 1.8V cores as well as additional 100 devices to guarantee an optimum device selection. Such products can be mobile wireless chargers, E-bikes and others.

TowerJazz's Power Management platform includes several distinctive advantages:

- Low R<sub>dson</sub> over a wide and scalable voltage range enabling the highest efficiencies in the foundry arena. TowerJazz's LDMOS transistors are optimized to maximize the cost/performance ratio and minimize the footprint with very small R<sub>dson</sub>.
- A wide range of substrate isolation types, ranging from bulk isolation for the majority of power management products to full dielectric isolation using 200V SOI for enabling positive and negative voltages on the same IC. The latter can be particularly useful for applications such as wireless charging, Class-D audio amplifier and automotive.
- High density logic cores both for the 1.8V and for the 5V library and high density non-volatile memories for applications which need high digital density such as wireless chargers, PMIC, smart power products, or automotive power controllers.
- Smart and flexible design kit which allows designers to reuse their designs, select the devices and perform smart verification to reach first time success.

## **MIXED-SIGNAL/CMOS PLATFORMS**

TowerJazz Mixed-Signal/CMOS platforms are an optimal solution for digital, analog, radio frequency (RF) and automotive applications.

The platforms support designers who are seeking volume production from 0.35um down to 45nm. In addition, they are ideal for customized designs for low power, analog and digital designs including the latest 65nm mmWave RFCMOS modeling and 18V HVCMOS.

The advantages of TowerJazz's Mixed-Signal/CMOS platforms include accurate analog modeling for RF applications up to 110GHz models. The design kit includes sub-threshold models, accurate passive (inductors, capacitors) with high matching and smart tool boxes. TowerJazz's 18V HVCMOS offers state of the art capability to design with gate and drain voltages up to 18V on the 0.18um process node.



“Through 2017 we will continue to focus on providing best in class offerings to answer our customers' growing demands. We will also extend our market differentiation by enabling great technological advantages such as lowering R<sub>dson</sub> and supporting high voltage full isolation.

We look forward to further enhancing collaboration with our existing partners in addition to new opportunities while continuing the growth trend.”

**Shimon Greenberg**

Vice President of Power Management & Mixed-Signal/CMOS Business Unit



## Main Applications



### SMARTPHONES, TABLETS & WEARABLES

The markets of wireless chargers, mobile PMIC for the smart phone, tablets and wearables are increasing the demand for high efficiency power converters. For these markets TowerJazz offers its leading low  $R_{dson}$ , fast switching LDMOS and isolation with minimum additional layers. For high integration needs, TowerJazz's high density digital solutions and embedded NVM (1.8V and 5V) can be used.



### AUTOMOTIVE, HOME APPLIANCES & INDUSTRIAL

TowerJazz expanded its offering to both the automotive and industrial markets to include motor drivers for various products such as drones, power tools, and large stacks of batteries for automotive. The technology is also suitable for DC-DC applications and electronic control units (ECUs) in automotive applications. TowerJazz's 200V SOI platform serves the need for high voltage and noise immunity while keeping the core power management platform to be reused with its 1.8V, 5V and up to 200V LDMOS.

### ACHIEVEMENTS IN 2016:

TowerJazz has been expanding its advanced 0.18-micron platforms, the mixed-signal and power management process (TS18SL and TS18PM) both in technology offerings and in production sites.

During 2016, TowerJazz ramped up the Power Management and the Mixed Signal platforms at TPSCo in Japan in record time; hundreds of products have already reached the mass production stage, enabling its customers production flexibility using the same PDK and platform for dual source production.

Also, TowerJazz has significantly increased close collaboration with its leading power management customers offering them first access to its leading technologies; to engage with its R&D and design resources to fast develop and secure their future business with TowerJazz.

On top of its wide platform offering, TowerJazz is continuously investing in further expanding its offering to cover more market segments – two additional advanced technologies were developed throughout the past year:

- TowerJazz now provides a 200V SOI technology platform which offers its customers a state of the art full isolation up to 200V using the standard TS18PM PDK. The 200V SOI technology is already in use by one of TowerJazz's leading customers to serve the motor control, medical, home appliances and automotive markets. Through 2017 the Company expects multiple products to be ramped up by many of its other customers.
- The second technology significantly improves TowerJazz's low voltage (below 5V) power management offering for applications like switch regulators, point of load market, etc. This technology offers an advanced isolation with minimum additional layers and advanced power transistors for high frequency switching regulators. TowerJazz released an advanced 5V digital library to enable the integration of more controllers within 5V only designs.

TowerJazz has also enabled an 18V HVCMOS offering to serve the needs for high voltage 0.18 $\mu$ m display drivers. Also included in the Power Management and Mixed Signal offerings are dual source top thick copper capabilities for high current applications.

## Focus for 2017

During 2017 TowerJazz will continue to expand its footprint in the power management market with new and advanced platforms and to enhance its close collaboration with its partners.

TowerJazz will continue to reduce the  $R_{dson}$  for voltages up to 80V, and to focus on its core and non-volatile

memories to allow more integration of control and processing within power products, all combined with best in class power management devices.

More engagements on the 200V SOI will happen during 2017 to support high voltage DC-DC converters, automotive applications and high voltage battery management ICs.



# *Facilitating Smooth Process Transfers and Fast Ramp to Production*

---

The TowerJazz TOPS business unit (BU) targets integrated device manufacturers (IDMs) that have fablight outsourcing strategies, capacity shortage with internal fabs, double source policies, and fab closures for cost reduction activities.

The TOPS business unit (BU) targets: (1) Integrated device manufacturers (IDMs) with fab-lite outsourcing strategies, capacity shortage at internal fabs, double source policies, and/or closure of underutilized fabs for cost reduction activities, and (2) Fabless companies that have process IP looking for a manufacturing site, process developed at an R&D center that needs to be transferred and optimized to production at a fabrication facility, as well as those needing to develop from R&D to production and those wanting to develop process IP, process module or flow.

The main customer applications currently supported by TOPS are discrete FETS for power applications, non-volatile memory (NVM), and magnetic memories, although TOPS can accommodate any customer flow. The fab-lite strategy seems to be a dominant trend for TOPS customers—with 5" & 6" fab closures (by many customers), industry consolidation of fabs, and cost reduction by moving to 8" wafers. Most TOPS engagements with top tier IDMs involve long-life, sole source flows. In such cases, the added value in engaging TowerJazz is not only for manufacture of those flows, but rather development of more advanced platforms. After the initial base platforms are transferred and qualified, additional advanced platforms are co-developed at TowerJazz sites as these fabs possess more advanced processing tools and technological capabilities than the IDM factories. The second most dominant trend is overflow capacity since companies are reluctant to spend substantial funds to purchase

manufacturing equipment for capacity expansion and prefer loading an external facility, which is much more economically feasible.

TowerJazz uses established proven methodologies and well-defined success criteria which lead to first time success and record time to production.

## **ACHIEVEMENTS IN 2016:**

This past year included multiple projects in TowerJazz's worldwide facilities with aggressive ramping of several large customer transfers, including the start of high volume production after a fast ramp for one of the Company's key customers. During 2016, TowerJazz also focused on qualifying process flows at its San Antonio fab to support continuous demand from its customers. Discrete devices continue to lead the TOPS business unit and long term contracts secure business for the coming years.



“2016 was a strong year for the TOPS BU with many projects completed and ramped into mass production.

In 2017, we will continue to support the strong demand from our customers, while focusing on process flow transfers, qualifications and development in our worldwide facilities.”

### **Zmira Shternfeld-Lavie**

Vice President of Process Engineering R&D  
General Manager of Transfer, Optimization and Development Process Services Business Unit (TOPS)





## TOPS Business Models



### HIGH VOLUME PROCESS TRANSFER

IDMs

Delivers fast and successful transfer services to IDMs with 'fab-lite' strategy, demand exceeding internal fabs' capacity, double source policy and/or underutilized fab closure activities. Enables secure transfer of process IP, technical flexibility and future generation developments. Provides TowerJazz with long-term utilization stability, reduced fab fixed cost model and true partnership with many additional opportunities.



### UNIQUE PROCESS TRANSFERS

FABLESS COMPANIES

Provides unique process tools and processes to manufacture customers' devices, with strong IP protection and an experienced team that enables first time success and fast time to market.



### EXTERNAL SERVICES SPECIAL MODELS

Full project support of technology and management, enables cradle to cradle success while providing TowerJazz with capacity independent revenue growth and high margin entry point into emerging markets.

## Focus for 2017

In the TOPS BU, the team is working on ramping new technologies of Tier 1 customers to mass production mainly in the areas of discrete devices and sensors, both in TowerJazz and TPSCO's fabs. Existing production customers are processing an increasing number of prototypes for new products, leading to increased production and continued business growth.

# An Environment of Innovation

TowerJazz has created an innovation environment based on the knowledge and skills of highly educated staff in its US, Israeli and Japanese fabs. The Company cooperates between the sites and utilizes the proficiency of the corresponding R&D teams in different fields of semiconductor science and technology to greatly benefit its customers.

The research focus is on new ideas related to emerging applications in areas such as communications, machine-human interaction, sensors and power devices.

Besides targeting the current tasks dictated by the expanding IoT and automotive markets as well as direct customer demands, TowerJazz performs studies that address future business directions and markets. In particular, studies were performed on the feasibility of integrating non-traditional CMOS foundry materials, devices and sensors on novel physical principles. Combining the experience of R&D engineers from diverse fields facilitates novel ideas that enable breakthrough business opportunities for TowerJazz customers.

## 2016 ACHIEVEMENTS AND COLLABORATIONS

In 2016, R&D projects in TowerJazz Business Units (BUs) were supported by customers, internal funding, government and international programs:

- Pronounced advancements were achieved in lower frequency RF (radio frequency) solutions for mobile applications. Development of switches with record figures of merit (FOM) below  $Ron \times Coff = 100$  femto-seconds were performed in cooperation between the R&D teams of the Newport Beach, CA, Migdal Haemek, Israel and the TPSCo Japan fabs. Novel directions of studies in the RF field include integration of SOI elements with SiGe technologies, formation of switches on highly isolating substrates, fabrication of switches using novel materials for low resistance, and R&D of new MEMS switches for advanced mobile devices.
- Within high frequency RF, in particular for wire-line and optical communications, as well as radar, TowerJazz

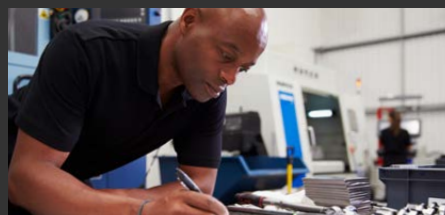
announced its *SiGe Terabit Platform* which includes advanced CMOS, together with low-noise, high-speed, and high power SiGe devices and unique patented features that enable best-in-class performance for the most demanding ICs in high-speed communication links. TowerJazz launched new process nodes of H5 & H6 with > 300 GHz performance. These BiPolar devices made with silicon-germanium based devices, operate at speeds and performance that are the same or better than leading edge digital CMOS.

- Joint work of the Migdal Haemek and TPSCo fabs on near-IR CMOS image sensors (CIS) for 3D gesture recognition systems resulted in a new generation of global shutter pixels with record sizes (2.8 $\mu$ m). Among the investigated future directions in the CIS field are sensing elements in the back-end, imagers with avalanche photodiodes and 3D integration of imagers.
- R&D in power management was focused on development of novel active and passive devices and specialized non-volatile memories (NVM) for existing production platforms. In the field of new power management platforms, significant progress was achieved in GaN HEMT devices fabricated on 6" GaN on Si substrates (joint work of Fab 1 in Migdal Haemek and the TOPS BU).
- Significant achievements were demonstrated in projects on gas sensors (TOPS and CMOS BUs), in particular in the MEMS part of the developed embedded sensors (membranes and supporting arms). In parallel, sensors based on electrostatically formed nanowires (EFN) were fabricated and extensively investigated (a project with Tel-Aviv University; government funding).



### ADVANCED TECHNOLOGIES

For next generation products and alignment with our customers' technology roadmaps.



### NOVEL IDEAS

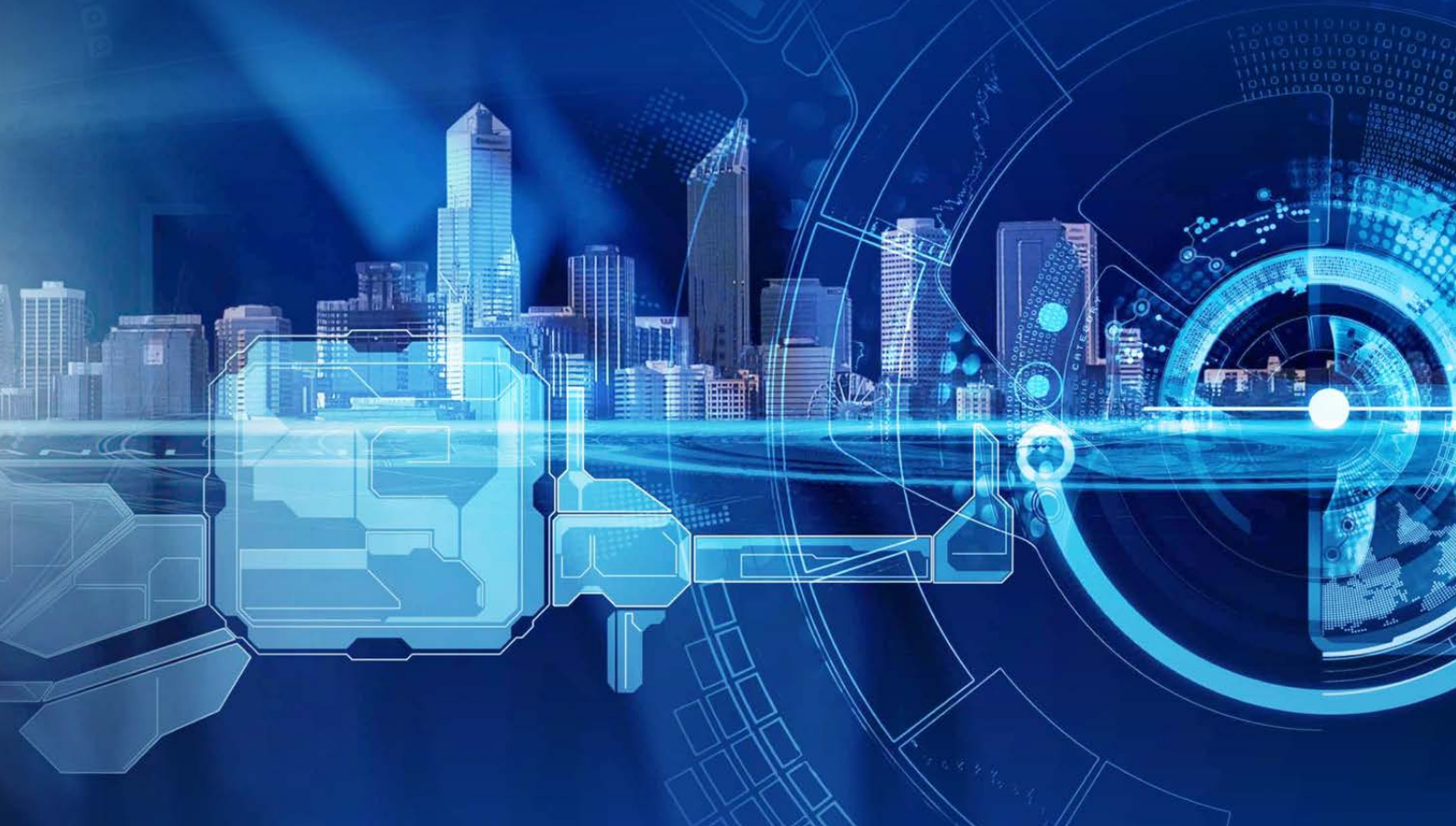
TowerJazz research enables breakthrough business for customers.



### EXPERIENCED ENGINEERS

Highly educated and experienced R&D engineers in all our worldwide fabs.





- Within the “More than Moore” paradigm, activities focused on an alternative to digital signal processing—single Poly memristors for beyond binary code human-like artificial intelligence were demonstrated. The prototypes are investigated in a joint project on neuromorphic simulations with Technion—Israel Institute of Technology.
- Promising results were obtained in silicon photonics projects run in the Migdal Haemek and Newport Beach fabs. Among the achievements—Si waveguides on SOI with 2.3 Db/cm losses supplied with modulators.

#### **Grants and Project Wins**

TowerJazz continues to work in Horizons 2020, a prestigious program of European Union grants through GREAT, a consortium on spintronic devices. In this consortium, TowerJazz activities are focused on integrating MTJ (magnetic tunnel junction) sensors and STT MRAMs in the same chip. Besides that, the Company cooperates in the EU COST Action IC1401 MemoCIS on memristors. TowerJazz also participated in projects associated with the US Department of Defense (DoD), supported several programs for the branches of the US armed services and received funding from DARPA on a number of projects.

#### **Press Announcements**

Several R&D achievements demonstrating the leadership position of TowerJazz in a broad range of technological areas were announced in 2016. For example, TowerJazz and e2v announced the world’s smallest global shutter pixel, on a 110nm CMOS technology node with extremely high shutter efficiency and low dark current noise. In addition, TowerJazz announced a novel Empirical ESD simulation flow of ESD protection circuits for reliable chip design. TowerJazz announced its “SiGe Terabit Platform” which included testimonials from multiple leading edge customers. In addition, a “Viability of 5G Communications” press announcement was released using TowerJazz technology,

with UC San Diego and Keysight. Another key TowerJazz announcement focused on mass production of a new Integrated SiGe-based ‘Front-End Module on a Chip,’ an RF platform tailored to meet the challenges of the Internet of Things.

#### **Patents**

In 2016, TowerJazz was granted 25 US patents and filed 28 new applications. The protected technologies include original power management devices, MEMS technologies, methods for increasing performance of analog products and memories. Several patents were issued on SOI switches, SiGe device and process technology, smart MTJ devices, advanced image sensors and memristors.

#### **Talks and Publications**

TowerJazz gave nine invited talks at international conferences and regional seminars, such as CIMTEC 2016 (MTJ integration technology), MRS2016 in Boston (radiation sensors), IEICE (IR sensitive pixels), and EDICON (switch and device modeling) in Beijing. TowerJazz engineers served in Technical/Steering Committees and as Section Chairs of IEDM, IEEE IMW, IEEE RWW, BCTM, IMS-MTT, MRS and other highly prestigious international venues.

Numerous research papers were published in well known international journals and conference proceedings such as IEEE VLSI, Microelectronics Reliability and others. Internally, Vol. 7 of TowerJazz Technical Journal (TJ<sup>2</sup>) was published, featuring 18 technical papers by employees from TowerJazz fabs and R&D divisions. The team maintained its internal TowerJazz Technical Forum (TTF) for senior technical leaders, and continued TowerJazz Education Seminars (TES) to mentor and foster engineering talent at each site. In addition, TowerJazz R&D roadmaps were discussed at three TowerJazz Global Symposium (TGS) sessions, and TGS was held in conjunction with RHET (radiation hardened electronics) for the US Aerospace & Defense community.

## *Enriching & Enhancing Society*

---

TowerJazz aims to enrich and improve not only individuals' lives, but develop society as a whole and believes corporate social responsibility is imperative to the Company's true success. TowerJazz and its employees are involved in a wide range of health, education, social and community activities that affect the community's well-being by promoting education, donating goods and through funding programs and services.

### **Educational and vocational development with a focus on gender equality and minority integration.**

TowerJazz inspires and rewards employees for outstanding achievements and innovation. The employee base is comprised of individuals from various cultures and backgrounds with a strong focus on gender equality. TowerJazz is an equal opportunity employer and provides health insurance for all employees.

The Company is committed to ensuring TowerJazz employees act in a lawful and ethical manner. All employees, in all of their activities, are expected to

operate in full compliance with all applicable laws, rules and regulations.

TowerJazz's social responsibility principles are modeled on and contain language from the Electronic Industry Citizenship Coalition (EICC) Code of Conduct, which establishes standards to ensure that working conditions in the electronics industry supply chain are safe, that workers are treated with respect and dignity and that business operations are environmentally responsible.

### **Internal and External Environment Achievements:**

- Substantial reductions in overall energy usage without sacrificing production resulting in utility savings. TowerJazz is committed to continue improving air and water quality and is dedicated to reducing electricity, water usage and waste water in its 24/7 fabrication facilities.
- Established programs aligned with the internationally recognized OECD (Organization for Economic Cooperation and Development) due diligence framework to regularly evaluate its supply chain and require suppliers to do the same.
- TowerJazz is ISO14001 and ISO18001 certified.
- Added scrubbers and abatement systems in order to support the fabs' capacity increase and maintain environment safety.
- Ergonomic support for employees' work environment.
- Upgraded dining rooms, cafeteria, and renovated rest areas, provided better transportation service to employees.
- Increased study funds for all employees.

### **TowerJazz Employee Social Responsibility Involvement:**

- Tutored kids in youth clubs and volunteered in recreational activities.
- Funded an educational program for children with learning disabilities.
- Participated in teaching English to the youth, improving their communication skills.
- Participated in teaching math to kids in elementary school, to encourage science studies in high school.
- Collaborated with environmental organizations and retirement institutions to help renovate buildings; prepared food packages; and participated in blood drives.
- Donated and delivered toys, books and other items to people in need during the holidays.





## *Global Awareness Investigation and Action (GAIA) Project*

TowerJazz continues in its eighth year of working with the Global Awareness Investigation and Action (GAIA) project led by Dr. Stuart Fleischer. GAIA involves middle and high school students as “scientific researchers and policy developers” working on environmental projects.

TowerJazz not only provides financial support, but takes a more holistic approach by providing access to onsite equipment in Migdal Haemek, engineering support and collaboration on various GAIA projects, guided tours for its participating schools, and design and development projects.

Along with supporting GAIA’s environmental projects, TowerJazz has made its engineers available to share

their background and passion for science and to expose students, in particular female students, to opportunities for careers in science and technology. Students participating in GAIA come from many places and school locations in the world, such as: Belgium, China, Czech Republic, Germany, Greece, India, Israel, Nigeria, South Korea, and the U.S.

For the 2016–2017 timeframe, TowerJazz is supporting a number of GAIA projects including: endangered species sanctuaries, recycling of materials to produce quality goods, biological pest control, and hydroponic indoor gardens.



“Our employees’ capabilities, dedication, loyalty and passion are primary factors in our Company’s achievements. With increased employee involvement we are able to create a better environment for our community while demonstrating our Company’s core values and social responsibility.”

**Dalit Dahan**

Senior Vice President of Human Resources  
& Information Technology



# *TowerJazz Reports Best Results in the History of the Company*

---

## Full Year and Fourth Quarter of 2016 Record Revenue, EBITDA and Free Cash Flow with Increased Margins

**MIGDAL HAEMEK, ISRAEL — February 13, 2017 —** TowerJazz (NASDAQ: TSEM & TASE: TSEM) today reports results for the fourth quarter and full year of 2016 ended December 31, 2016.

### **Highlights of the Full Year 2016**

- Record revenues of \$1.25 billion, up 30% year over year;
- Record EBITDA of \$367 million, up 48% year over year;
- Record net profit of \$204 million, as compared to a net loss of \$30 million for the full year of 2015;
- Record cash from operations of \$327 million and record free cash flow of \$118 million, resulting in record cash balance and record shareholders' equity.

### **Highlights of the Fourth Quarter of 2016 and First Quarter of 2017 Guidance**

- Record revenues of \$340 million, up 34% year over year;
- Record gross profit of \$88 million, up 36% year over year;
- Record operating profit of \$55 million, up 61% year over year;
- Record EBITDA of \$105 million, up 39% year over year;
- Net profit of \$48 million, up 119% year over year;
- Cash from operations of \$82 million and record free cash flow of \$39 million;
- First quarter revenue guidance with mid-range of \$330 million, up 19% year over year; targeting growth throughout the year.

### **Chairman and CEO End of Year Commentary**

Mr. Russell Ellwanger, Chief Executive Officer of TowerJazz, commented, "2016 was on all fronts, business, financial, operational and technological, the best year TowerJazz has posted. The year began with a successful acquisition of the San Antonio facility, increasing our capacity and operational flexibility, and ended achieving our stated target in the fourth quarter of \$100 million annualized third party revenue at TPSCo."

Continued Mr. Ellwanger, "Entering 2017, we focus on utilizing the capacity of the acquired Panasonic and Maxim fabs to meet the increasing customers' demand within our strong advanced analog offerings. Present customer forecast indicates growth throughout the year with each quarter being significantly higher year over year. We are excited with our business and financial position that allows us to capitalize upon new initiatives to continue value creation."

Mr. Amir Elstein, Chairman of the TowerJazz Board of Directors, summarized: "2016, as a record year, is a strong validation of the business models and the executions behind becoming the worldwide leading specialty analog foundry. The board and I wholeheartedly congratulate all the dedicated employees of TowerJazz, the management and Russell, for all their efforts, activities and accomplishments of multiple years resulting in this record year we have just completed. We very much look forward to another significant year with great achievements."

### **Fourth Quarter Results Overview**

Revenues for the 2016 fourth quarter were a record \$340 million reflecting 34% growth as compared to the fourth quarter of 2015. Revenues were 4% higher than those of the previous quarter.

Gross profit for the fourth quarter of 2016 was \$88 million, representing an increase of 36% as compared with \$65 million in the fourth quarter of 2015, and an increase of 8% as compared with \$81 million gross profit in the immediately preceding quarter.

Operating profit was \$55 million for the fourth quarter of 2016, as compared with \$34 million reported in the fourth quarter of 2015 and \$49 million operating profit in the immediately preceding quarter.

Net profit for the fourth quarter of 2016 was \$48 million, or \$0.53 basic earnings per share, demonstrating increased sustainable GAAP net profit, as compared with \$22 million or \$0.28 basic earnings per share in the fourth quarter

of 2015. Net profit for the third quarter of 2016 of \$51 million, or \$0.58 basic earnings per share, and included a non-recurring \$6 million of income tax benefit related to finalization of the closure of the Japanese subsidiary that held the fab in Nishiwaki, Japan, which ceased operations in 2014.

On an adjusted basis, as described and reconciled in the tables below, adjusted net profit for the fourth quarter of 2016 was \$53 million, compared with \$26 million for the fourth quarter of 2015 and \$49 million in the immediately preceding quarter.

EBITDA for the fourth quarter totaled \$105 million. This represents a 39% increase as compared with \$76 million in the fourth quarter of 2015 and a 9% sequential increase as compared with \$97 million in the immediately preceding quarter.

Cash and short term deposits on December 31, 2016 were \$389 million as compared to \$363 million as of September 30, 2016. The main cash activities during the fourth quarter of 2016 were comprised of the following: \$82 million cash generated from operating activities; \$11 million received from the exercise of warrants and options; investments of \$43 million in fixed assets, net; \$6 million debt repayments and \$17 million effect of the Japanese Yen exchange rate on cash balance.

#### **Full Year 2016 Financial Results**

Revenues for 2016 were a record \$1.25 billion reflecting 30% growth as compared to 2015 revenues of \$961 million.

Gross profit for 2016 was \$303 million. This represents an increase of 48% as compared with \$205 million in 2015. Operating profit was \$175 million in 2016, as compared with \$82 million in 2015.

Net profit for 2016 was \$204 million, or \$2.33 basic earnings per share, demonstrating increased net profit, as compared with net loss of \$30 million or \$0.40 basic loss per share in 2015. Net profit for 2016 included \$50 million gain, net, from the San Antonio acquisition and \$6 million income tax benefit related to the closure finalization of the Nishiwaki Japanese subsidiary, which were partially offset by \$7 million non-cash financing expenses relating to the Israeli banks' loans early repayment. Net loss for 2015 included \$81 million non-cash financing expense associated with Series F Bonds accelerated conversion done in 2015, \$18 million income tax benefit resulting from the expiration of statute of limitations and Japanese income tax rate reduction.

On an adjusted basis, as described and reconciled in the tables below, adjusted net profit for 2016 was \$175 million, compared with \$49 million for 2015, representing a \$126 million increased adjusted net profit derived from the \$289 million higher revenues.

EBITDA for the year was \$367 million. This represents a 48% increase as compared with \$248 million in 2015, or \$119 million increased EBITDA derived from the \$289 million higher revenues.

Cash and short term deposits on December 31, 2016 were \$389 million as compared to \$206 million on December 31, 2015. The main cash activities during 2016 were comprised of the following: \$327 million cash generated from operating activities; \$39 million received from the exercise of warrants and options; \$37 million debt received, net of debt principal payments; and investments of \$210 million in fixed assets, net.

Shareholders' equity as of December 31, 2016 was a record of \$683 million, 77% higher than \$386 million as of December 31, 2015. Net cash as of December 31, 2016 totaled \$37 million as compared to net debt of \$105 million as of December 31, 2015.

#### **Business Outlook**

TowerJazz expects revenues for the first quarter of 2017 ending March 31, 2017 to be \$330 million with an upward or downward range of 5%, representing approximately 19% year over year revenue growth as compared to the first quarter of 2016.

#### **Teleconference and Webcast**

TowerJazz will host an investor conference call today, February 13, 2017, at 10:00 a.m. Eastern time (9:00 a.m. Central time, 8:00 a.m. Mountain time, 7:00 a.m. Pacific time and 5:00 p.m. Israel time) to discuss the Company's financial results for the fourth quarter and full year 2016 and its first quarter 2017 outlook.

This call will be webcast and can be accessed via TowerJazz's website at [www.towerjazz.com](http://www.towerjazz.com), or by calling: 1-888-668-9141 (U.S. Toll-Free), 03-918-0609 (Israel), +972-3-918-0609 (International). For those who are not available to listen to the live broadcast, the call will be archived for 90 days.

*The Company presents its financial statements in accordance with U.S. GAAP. The audited financial statements in accordance with US GAAP will be included in the 6-K to be filed with the annual financial statements and Form 20-F. The financial information included in the tables below contain abbreviated financial results which are not audited or in accordance with US GAAP. Some of the financial information in this release, which we refer to in this release as "adjusted financial measures", are non-GAAP financial measures as defined in Regulation G and related reporting requirements promulgated by the Securities and Exchange Commission as they apply to our Company. These adjusted financial measures are calculated excluding one or more of the following: (1) amortization of acquired intangible assets; (2) compensation expenses in respect of equity grants to directors, officers and employees; (3) gain from acquisition, net; (4) other non-cash financing expense, net associated with Bonds Series F accelerated conversion; (5) non-cash financing expenses related to bank loans early repayment; (6) non-recurring income tax benefit; (7) Nishiwaki Fab restructuring and impairment cost (income), net; and (8) other non-recurring items. These adjusted financial measures should be evaluated in conjunction with, and are not a substitute for, GAAP financial measures. The tables also present the GAAP financial measures, which are most comparable to the adjusted financial measures as well as reconciliation between the adjusted financial measures and the comparable GAAP financial measures. As used in this release, the term Earnings Before Interest Tax Depreciation and Amortization (EBITDA) consists of profit or loss, according to U.S. GAAP, excluding gain from acquisition, net, interest and other financing expenses (net), other income (expense), net, taxes, non-controlling interest, depreciation and amortization, stock based compensation expenses, acquisition related costs and Nishiwaki Fab restructuring and impairment cost (income), net. EBITDA is reconciled in the tables below from GAAP operating profit. EBITDA is not a required GAAP financial measure and may not be comparable to a similarly titled measure employed by other companies. EBITDA and the adjusted financial information presented herein should*

not be considered in isolation or as a substitute for operating profit, net profit or loss, cash flows provided by operating, investing and financing activities, per share data or other profit or cash flow statement data prepared in accordance with GAAP. Net cash or net debt, as presented in this release, is comprised of the outstanding principal amount of banks' loans (in the amounts of approximately \$166 million and \$246 million as of December 31, 2016 and December 31, 2015, respectively) and the outstanding principal amount of debentures (in the amounts of approximately \$186 million and \$65 million as of December 31, 2016 and December 31, 2015, respectively), less cash and short-term deposits (in the amounts of approximately \$389 million and \$206 million as of December 31, 2016 and December 31, 2015, respectively).

## About TowerJazz

Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM) and its fully owned U.S. subsidiaries Jazz Semiconductor, Inc. and TowerJazz Texas Inc., operate collectively under the brand name TowerJazz, the global specialty foundry leader. TowerJazz manufactures integrated circuits, offering a broad range of customizable process technologies including: SiGe, BiCMOS, mixed-signal/CMOS, RF CMOS, CMOS image sensor, integrated power management (BCD and 700V), and MEMS. TowerJazz also provides a world-class design enablement platform for a quick and accurate design cycle as well as Transfer Optimization and development Process Services (TOPS) to IDMs and fabless companies that need to expand capacity.

To provide multi-fab sourcing and extended capacity for its customers, TowerJazz operates two manufacturing facilities in Israel (150mm and 200mm), two in the U.S. (200mm) and three additional facilities in Japan (two 200mm and one 300mm) through TowerJazz Panasonic Semiconductor Co. (TPSCo), established with Panasonic Corporation of which TowerJazz has the majority holding. Through technologies, including the most advanced image sensor technologies. For more information, please visit [www.towerjazz.com](http://www.towerjazz.com) or [www.tpsemico.com](http://www.tpsemico.com).

## CONTACTS:

Noit Levi | TowerJazz  
+972 4 604 7066 | [Noit.levi@towerjazz.com](mailto:Noit.levi@towerjazz.com)

GK Investor Relations | Gavriel Frohwein  
(646) 688 3559 | [towerjazz@gkir.com](mailto:towerjazz@gkir.com)

*This press release includes forward-looking statements, which are subject to risks and uncertainties. Actual results may vary from those projected or implied by such forward-looking statements and you should not place any undue reliance on such forward-looking statements. Potential risks and uncertainties include, without limitation, risks and uncertainties associated with: (i) demand in our customers' end markets; (ii) over demand for our foundry services and/or products that exceeds our capacity; (iii) maintaining existing customers and attracting additional customers, (iv) high utilization and its effect on cycle time, yield and on schedule delivery which may cause customers to transfer their product(s) to other fabs, (v) operating results fluctuate from quarter to quarter making it difficult to predict future performance, (vi) impact of our debt and other liabilities on our financial position and operations, (vii) our ability to successfully execute acquisitions, integrate them into our business, utilize our expanded capacity and find new business, (viii) fluctuations in cash flow, (ix) our ability to satisfy the covenants stipulated in our agreements with our lender banks and bondholders (as of December 31, 2016 we are in compliance with all such covenants included in our banks' agreements, bond G indenture and others), (x) pending litigation, including the shareholder class actions that were filed against the Company, certain officers, its directors and/or its external auditor in the US and Israel, following a short sell thesis report issued by a short-selling focused firm, which has been dismissed and closed*

*in the US and is still pending in Israel; (xi) our majority stake in TPSCo and our acquisition of the San Antonio fabrication facility by TowerJazz Texas ("TJT"), including new customer engagements, qualification and production ramp-up, (xii) the closure of TJP within the scope of restructuring our activities and business in Japan, settling any future claims or potential claims from third parties, (xiii) meeting the conditions set in the approval certificates received from the Israeli Investment Center under which we received a significant amount of grants in past years, (xiv) receipt of orders that are lower than the customer purchase commitments, (xv) failure to receive orders currently expected, (xvi) possible incurrence of additional indebtedness, (xvii) effect of global recession, unfavorable economic conditions and/or credit crisis, (xviii) our ability to accurately forecast financial performance, which is affected by limited order backlog and lengthy sales cycles, (xix) possible situations of obsolete inventory if forecasted demand exceeds actual demand when we manufacture products before receipt of customer orders, (xx) the cyclical nature of the semiconductor industry and the resulting periodic overcapacity, fluctuations in operating results and future average selling price erosion, (xxi) the execution of debt re-financing and/or fundraising to enable the service of our debt and/or other liabilities, (xxii) operating our facilities at high utilization rates which is critical in order to cover a portion or all of the high level of fixed costs associated with operating a foundry, and our debt, in order to improve our results, (xxiii) the purchase of equipment to increase capacity, the timely completion of the equipment installation, technology transfer and raising the funds therefor, (xxiv) the concentration of our business in the semiconductor industry, (xxv) product returns, (xxvi) our ability to maintain and develop our technology processes and services to keep pace with new technology, evolving standards, changing customer and end-user requirements, new product introductions and short product life cycles, (xxvii) competing effectively, (xxviii) use of outsourced foundry services by both fabless semiconductor companies and integrated device manufacturers; (xxix) achieving acceptable device yields, product performance and delivery times, (xxx) our dependence on intellectual property rights of others, our ability to operate our business without infringing others' intellectual property rights and our ability to enforce our intellectual property against infringement, (xxxi) retention of key employees and recruitment and retention of skilled qualified personnel, (xxxii) exposure to inflation, currency rates (mainly the Israeli Shekel and Japanese Yen) and interest rate fluctuations and risks associated with doing business locally and internationally, as well fluctuations in the market price of our traded securities, (xxxiii) issuance of ordinary shares as a result of conversion and/or exercise of any of our convertible securities, as well as any sale of shares by any of our shareholders, or any market expectation thereof, which may depress the market price of our ordinary shares and may impair our ability to raise future capital, (xxxiv) meeting regulatory requirements worldwide, including environmental and governmental regulations; and (xxxv) business interruption due to fire and other natural disasters, the security situation in Israel and other events beyond our control such as power interruptions.*

*A more complete discussion of risks and uncertainties that may affect the accuracy of forward-looking statements included in this press release or which may otherwise affect our business is included under the heading "Risk Factors" in Tower's most recent filings on Forms 20-F and 6-K, as were filed with the Securities and Exchange Commission (the "SEC") and the Israel Securities Authority. Future results may differ materially from those previously reported. The Company does not intend to update, and expressly disclaims any obligation to update, the information contained in this release.*



**TOWER SEMICONDUCTOR LTD. AND SUBSIDIARIES**  
**CONDENSED CONSOLIDATED BALANCE SHEETS**

*(dollars in thousands)*

	December 31, 2016	September 30, 2016	December 31, 2015
<b>ASSETS</b>			
<b>CURRENT ASSETS</b>			
Cash and short term deposits	\$389,377	\$362,833	\$205,575
Trade accounts receivable	141,048	128,979	110,065
Inventories	137,532	143,090	105,681
Other current assets	30,041	32,851	25,406
Total current assets	697,998	667,753	446,727
<b>LONG-TERM INVESTMENTS</b>	25,624	24,616	11,737
<b>PROPERTY AND EQUIPMENT, NET</b>	616,686	643,046	459,533
<b>INTANGIBLE ASSETS, NET</b>	28,129	32,687	34,468
<b>GOODWILL</b>	7,000	7,000	7,000
<b>OTHER ASSETS, NET</b>	4,447	4,535	5,903
<b>TOTAL ASSETS</b>	\$1,379,884	\$1,379,637	\$965,368
<b>LIABILITIES AND SHAREHOLDERS' EQUITY</b>			
<b>CURRENT LIABILITIES</b>			
Short term debt	\$48,084	\$41,646	\$33,259
Trade accounts payable	99,262	105,745	91,773
Deferred revenue and customers' advances	26,169	25,878	23,373
Other current liabilities	73,600	81,248	62,714
Total current liabilities	247,115	254,517	211,119
<b>LONG-TERM DEBT</b>	296,144	330,526	256,019
<b>LONG-TERM CUSTOMERS' ADVANCES</b>	41,874	36,547	21,102
<b>EMPLOYEE RELATED LIABILITIES</b>	14,176	14,169	14,189
<b>DEFERRED TAX LIABILITY</b>	97,961	107,843	77,353
<b>TOTAL LIABILITIES</b>	697,270	743,602	579,782
<b>TOTAL SHAREHOLDERS' EQUITY</b>	682,614	636,035	385,586
<b>TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY</b>	\$1,379,884	\$1,379,637	\$965,368

**TOWER SEMICONDUCTOR LTD. AND SUBSIDIARIES**  
**CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS**

*(dollars in thousands, except per share data)*

	Three months ended		
	December 31,	September 30,	December 31,
	2016	2016	2015
	GAAP	GAAP	GAAP
<b>REVENUES</b>	\$340,379	\$326,209	\$254,602
<b>COST OF REVENUES</b>	252,648	244,915	190,072
<b>GROSS PROFIT</b>	87,731	81,294	64,530
<b>OPERATING COSTS AND EXPENSES</b>			
Research and development	16,320	15,547	15,704
Marketing, general and administrative	16,209	16,787	15,478
Nishiwaki Fab restructuring costs and impairment, net	—	—	(991)
	32,529	32,334	30,191
<b>OPERATING PROFIT</b>	55,202	48,960	34,339
<b>INTEREST EXPENSE, NET</b>	(2,230)	(3,272)	(2,366)
<b>OTHER NON CASH FINANCING EXPENSE, NET</b>	1,215	(2,210)	(12751) (a)
<b>OTHER INCOME (EXPENSE), NET</b>	948	5,081	70
<b>PROFIT BEFORE INCOME TAX</b>	53,239	48,559	19,292
<b>INCOME TAX BENEFIT (EXPENSE)</b>	(986)	3,459 (b)	4,779 (b)
<b>PROFIT BEFORE NON CONTROLLING INTEREST</b>	52,253	52,018	24,071
<b>NON CONTROLLING INTEREST</b>	(3,972)	(805)	(1,992)
<b>NET PROFIT</b>	\$48,281	\$51,213	\$22,079
<b>BASIC EARNINGS PER SHARE</b>	\$0.53	\$0.58	\$0.28
Weighted average number shares	91,234	87,821	79,607
<b>DILUTED EARNINGS PER SHARE</b>	\$0.49	\$0.52	\$0.25
Net profit used for diluted earnings per share	\$50,397	\$53,318	\$22,079
Weighted average number of shares	103,612	101,805	88,970

(a) Three months ended December 31, 2015 included \$6,998 of non-cash financing expense due to bonds series F accelerated conversion.

(b) Three months ended September 30, 2016 included \$6,472 income tax benefit due to TJP legal entity closure following Nishiwaki Fab cessation of operation announced in 2014; three months ended December 31, 2015 included \$6,389 income tax benefit due to Japanese income tax rate reduction.

**TOWER SEMICONDUCTOR LTD. AND SUBSIDIARIES**  
**CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS**

*(dollars and share count in thousands, except per share data)*

	Year ended December 31,	
	2016	2015
<b>REVENUES</b>	\$1,249,634	\$960,561
<b>COST OF REVENUES</b>	946,534	755,196
<b>GROSS PROFIT</b>	303,100	205,365
<b>OPERATING COSTS AND EXPENSES</b>		
Research and development	63,134	61,669
Marketing, general and administrative	65,439	62,793
Nishiwaki Fab restructuring and impairment cos (Income), net	(627)	(991)
	127,946	123,471
<b>OPERATING PROFIT</b>	175,154	81,894
<b>INTEREST EXPENSES, NET</b>	(11,857)	(13,179)
<b>OTHER NON CASH FINANCING EXPENSE, NET</b>	(12,492)	(109,930) (a)
<b>GAIN FROM ACQUISITION, NET</b>	50,471	—
<b>OTHER INCOME (EXPENSE), NET</b>	9,322	(190)
<b>PROFIT (LOSS) BEFORE INCOME TAX</b>	210,598	(41,405)
<b>INCOME TAX BENEFIT (EXPENSE)</b>	(1,432) (b)	12,278 (b)
<b>PROFIT (LOSS) BEFORE NON CONTROLLING INTEREST</b>	209,166	(29,127)
<b>NON CONTROLLING INTEREST</b>	(5,242)	(520)
<b>NET PROFIT (LOSS)</b>	\$203,924	\$(29,647)
<b>BASIC EARNINGS (LOSS) PER ORDINARY SHARE</b>	\$2.33	\$0.40
Weighted average number of ordinary shares	87,480	74,366
<b>DILUTED EARNINGS PER ORDINARY SHARE</b>	\$2.09	
Net profit used for diluted earnings per share	\$212,160	
Weighted average number of ordinary shares	101,303	

(a) Year ended December 31, 2015 included \$80,815 of non-cash financing expense due to bonds series F accelerated conversion.

(b) Year ended December 31, 2016 included \$6,472 of income tax benefit in relation to TJP legal entity closure following Nishiwaki Fab cessation of operation announced in 2014; year ended December 31, 2015 included \$11,153 income tax benefit resulting from expiration of statute of limitations and \$6,389 income tax benefit of Japanese income tax rate reduction.



**TOWER SEMICONDUCTOR LTD. AND SUBSIDIARIES**  
**UNAUDITED RECONCILIATION OF CERTAIN FINANCIAL DATA**

*(dollars and share count in thousands, except per share data)*

	Three months ended		
	December 31,	September 30,	December 31,
	2016	2016	2015
<b>RECONCILIATION FROM GAAP NET PROFIT TO ADJUSTED NET PROFIT:</b>			
<b>GAAP NET PROFIT</b>	\$48,281	\$51,213	\$22,079
Stock based compensation	2,381	2,337	1,975
Amortization of acquired intangible assets	2,777	2,367	2,374
Nishiwaki Fab restructuring and impairment cost (income), net	—	—	(991)
Financing expense, net associated with Bonds Series F accelerated conversion	—	—	6,998
Income tax benefit, see (1) below	—	6,472	6,389
<b>ADJUSTED NET PROFIT</b>	<u>53,439</u>	<u>49,445</u>	<u>26,046</u>
<b>ADJUSTED NET PROFIT PER SHARE</b>			
Basic	\$0.59	\$0.56	\$0.33
Diluted	\$0.54	\$0.51	\$0.29
Fully diluted, see (2) below	\$0.52	\$0.48	\$0.27
<b>ADJUSTED NET PROFIT USED TO CALCULATE PER SHARE DATA:</b>			
Basic	\$53,439	\$49,445	\$26,046
Diluted	\$55,555	\$51,550	\$26,472
Fully diluted	\$55,555	\$51,550	\$28,440
<b>NUMBER OF SHARES AND OTHER SECURITIES USED TO CALCULATE PER SHARE DATA:</b>			
Basic	91,234	87,821	79,606
Diluted	103,612	101,805	91,086
Fully diluted, see (2) below	107,121	107,146	103,477
<b>EBITDA CALCULATION:</b>			
<b>GAAP OPERATING PROFIT</b>	\$55,202	\$48,960	\$34,339
<b>Cost of revenue:</b>			
Depreciation of fixed assets	44,874	43,110	37,841
Stock based compensation	835	936	686
Amortization of acquired intangible assets	2,589	2,180	2,186
<b>Research and development:</b>			
Stock based compensation	557	501	519
<b>Marketing, general and administrative:</b>			
Stock based compensation	989	900	770
Amortization of acquired intangible assets	188	187	188
Nishiwaki Fab restructuring and impairment cost (income), net	—	—	(991)
<b>EBITDA</b>	<u>\$105,234</u>	<u>\$96,774</u>	<u>\$75,538</u>

(1) Three months ended September 30, 2016 included income tax benefit in relation to TJP legal entity closure following Nishiwaki Fab cessation of operation announced in 2014; three months ended December 31, 2015 included income tax benefit due to Japanese income tax rate reduction.

(2) Fully diluted share count includes all issued and outstanding securities; outstanding ordinary share count as of December 31, 2016 is 92,985.

**TOWER SEMICONDUCTOR LTD. AND SUBSIDIARIES**  
**UNAUDITED RECONCILIATION OF CERTAIN FINANCIAL DATA**

*(dollars and share count in thousands, except per share data)*

	Year ended December 31,	
	2016	2015
<b>RECONCILIATION FROM GAAP NET PROFIT TO ADJUSTED NET PROFIT:</b>		
<b>GAAP NET PROFIT (LOSS)</b>	\$203,924	(29,647)
Stock based compensation	9,406	7,540
Amortization of acquired intangible assets	9,780	8,696
Financing expense, net associated with Bonds Series F accelerated conversion	—	80,815
Non cash financing expense related to bank loan early repayment	6,653	—
Gain from acquisition, net	(50,471)	—
Other non-recurring items, see (1) below	2,378	(991)
Income tax benefit, see (2) below	(6,472)	(17,542)
<b>ADJUSTED NET PROFIT</b>	<b>\$175,198</b>	<b>\$48,871</b>
<b>ADJUSTED NET PROFIT PER SHARE</b>		
Basic	\$2.00	\$0.66
Diluted	\$1.81	\$0.58
Fully diluted	\$1.71	\$0.63
<b>ADJUSTED NET PROFIT USED TO CALCULATE PER SHARE DATA:</b>		
Basic	\$175,198	\$48,871
Diluted	\$183,434	\$48,871
Fully diluted	\$183,434	\$65,136
<b>NUMBER OF SHARES AND OTHER SECURITIES USED TO CALCULATE PER SHARE DATA:</b>		
Basic	87,480	74,366
Diluted	101,303	84,902
Fully diluted	107,121	103,477
<b>EBITDA CALCULATION:</b>		
<b>GAAP OPERATING PROFIT</b>	\$175,154	\$81,894
<b>Cost of revenue:</b>		
Depreciation of fixed assets	169,958	151,221
Stock based compensation	3,920	2,214
Amortization of acquired intangible assets	9,029	7,944
Acquisition related non-recurring costs	3,005	—
<b>Research and development:</b>		
Stock based compensation	2,119	1,905
<b>Marketing, general and administrative:</b>		
Stock based compensation	3,367	3,421
Amortization of acquired intangible assets	751	752
<b>Nishiwaki Fab restructuring and impairment cost (income), net</b>	<b>(627)</b>	<b>(991)</b>
<b>EBITDA</b>	<b>\$366,676</b>	<b>\$248,360</b>

(1) Year ended December 31, 2016 included mainly acquisition related costs; year ended December 31, 2015 included mainly Nishiwaki Fab restructuring and impairment cost (income), net.

(2) Year ended December 31, 2016 included \$6,472 of income tax benefit in relation to TJP legal entity closure following Nishiwaki Fab cessation of operation announced in 2014; year ended December 31, 2015 included \$11,153 income tax benefit resulting from expiration of statute of limitations and \$6,389 income tax benefit due to Japanese income tax rate reduction.

**TOWER SEMICONDUCTOR LTD. AND SUBSIDIARIES**  
**CONSOLIDATED SOURCES AND USES REPORT**

*(dollars in thousands)*

	Three months ended		
	December 31, 2016	September 30, 2016	December 31, 2015
<b>Cash and short-term deposits - beginning of period</b>	\$362,833	\$311,062	\$155,348
Cash from operations	81,835	86,410	53,180
Investments in property and equipment, net	(42,929)	(54,947)	(58,291)
Exercise of warrants and options, net	10,644	21,918	4,168
Debt received (repaid), net	30,041	32,851	25,406
Effect of Japanese Yen exchange rate change over cash balance	(17,353)	2,336	154
TPSCo dividend to Panasonic	—	—	(1,570)
Long-term deposits and investments	—	(12,500)	—
<b>Cash and short-term deposits - end of period</b>	<u>\$389,377</u>	<u>\$362,833</u>	<u>\$205,575</u>

	Year ended	
	December 31, 2016	December 31, 2015
<b>Cash and short-term deposits - beginning of period</b>	\$205,575	\$187,167
Cash from operations	327,468	195,213
Investments in property and equipment, net	(209,624)	(165,489)
Exercise of warrants and options, net	38,803	14,424
Debt received (repaid), net	37,091	903
Effect of Japanese Yen exchange rate change over cash balance	5,635	(166)
TPSCo dividend to Panasonic	(2,563)	(1,570)
Long-term deposits and investments	(13,008)	—
Nishiwaki employees retirement related payments in connection with its operation cessation	—	(24,907)
<b>Cash and short-term deposits - end of period</b>	<u>\$389,377</u>	<u>\$205,575</u>



**TOWER SEMICONDUCTOR LTD. AND SUBSIDIARIES**  
**CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS**

*(dollars in thousands)*

	Year ended December 31,	
	2016	2015
<b>CASH FLOWS - OPERATING ACTIVITIES</b>		
Net profit (loss) for the period	\$209,166	\$(29,127)
Adjustments to reconcile net profit (loss) for the period to net cash provided by operating activities:		
Income and expense items not involving cash flows:		
Depreciation and amortization	197,606	168,032
Financing expense associated with debentures series F	150	87,973
Effect of indexation, translation and fair value measurement on debt	8,292	16,078
Other expense (income), net	(9,322)	190
Gain from acquisition	(50,471)	—
Changes in assets and liabilities:		
Trade accounts receivable	(30,104)	(11,115)
Other current assets	(265)	(14,978)
Inventories	(22,069)	(17,908)
Trade accounts payable	5,550	(26,163)
Deferred revenue and customers' advances	(23,581)	32,725
Other current liabilities	(145)	8,454
Long-term employee related liabilities	(798)	(2,036)
Deferred tax liability, net	(3,703)	(16,912)
Nishiwaki employee related retirement payments in connection with its operation cessation	—	(24,907)
Net cash provided by operating activities	327,468	170,306
<b>CASH FLOWS - INVESTING ACTIVITIES</b>		
Investments in property and equipment, net	(209,624)	(165,489)
Long-term deposits and investments, net	(17,101)	(30,000)
Net cash used in investing activities	(226,725)	(195,489)
<b>CASH FLOWS - FINANCING ACTIVITIES</b>		
Debt received, net of repayment	37,091	903
Exercise of warrants and options, net	38,803	14,424
Dividend payment to Panasonic	(2,563)	(1,570)
Net cash provided by financing activities	73,331	13,757
<b>EFFECT OF FOREIGN CURRENCY EXCHANGE RATE CHANGE</b>	5,635	(166)
<b>INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS</b>	179,709	(11,592)
<b>CASH AND CASH EQUIVALENTS - BEGINNING OF PERIOD</b>	175,575	187,167
<b>CASH AND CASH EQUIVALENTS - END OF PERIOD</b>	355,284	175,575
Short-term deposits	34,093	30,000
<b>CASH AND SHORT TERM DEPOSITS - END OF PERIOD</b>	389,377	205,575

## TOWERJAZZ WORLD HEADQUARTERS

Tower Semiconductor Ltd.  
Ramat Gavriel Industrial Park  
20 Shaul Amor Avenue  
P.O. Box 619  
Migdal Haemek 23105 Israel

Phone: +972-4-6506611  
Fax: +972-4-6547788

## INVESTOR RELATIONS & CORPORATE COMMUNICATIONS

Noit Levy-Karoubi, Vice President  
Phone: +972-4-6047066  
E-mail: [noit.levi@towerjazz.com](mailto:noit.levi@towerjazz.com)

**TOWERJAZZ**  
[www.towerjazz.com](http://www.towerjazz.com)