



*The Global Specialty Foundry Leader*

A circular icon with a silver border and a green, textured interior, resembling a microchip or a lens.

## ***Company Overview, Performance and Strategy***

NASDAQ/ TASE: TSEM

*Mr. Russell Ellwanger, CEO*

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# Company Highlights

## ***TowerJazz : the global specialty foundry leader***

- Manufacture analog IC in growing markets such as consumer, automotive, medical, industrial, and aerospace & defense
- Offer advanced specialty process technologies including RF/HPA, PM, CIS, MS/CMOS, and MEMS capabilities



## **Strong performance & financials**

- Annual revenue run rate of >\$1B with continuous Q/Q revenue growth
- Substantial margins increase with sustainable model for growing net profit
- Strong balance sheet and financial ratios

**6 WW manufacturing facilities | 4,000 employees | Over 300 customers**

# Foundry Landscape

(\$M)	2005		2010		2014		Accumulated Growth
A	TSMC	8,217	TSMC	13,307	TSMC	24,976	204%
B	UMC	3,259	UMC	3,965	GlobalFoundries	4,355	285%
C	SMIC	1,171	GlobalFoundries	3,510	UMC	4,350	33%
D	PowerChip	1,587	PowerChip	2,424	SMIC	1,970	68%
E	Chartered	1,132	SMIC	1,555	PowerChip	1,282	-19%
1	Vanguard	353	<b>TowerJazz</b>	<b>509</b>	<b>TowerJazz</b>	<b>828</b>	<b>712%</b>
2	Dongbu	347	Vanguard	505	Vanguard	790	124%
3	HHNEC	313	Dongbu	495	Hua Hong Semi	685	119%
4	SSMC	280	SSMC	330	Dongbu HiTek	541	56%
5	He Jian	250	X-Fab	320	X-Fab	330	63%
11	<b>Tower</b>	<b>102</b>					

Digital Deep Sub Micron

Specialty Analog

**The fastest growing foundry in the world**

Source: IC Insights, EE Times, Company Reports

# 2015 : Year in Review - Financials

*(based on Q4'2015 guidance)*

## ■ Revenue growth

- Record revenues and quarter over quarter increase with strong organic growth
- Annual revenues run rate of over \$1B

## ■ GAAP net profit

- Sustainable business and financial model for net profit growth

## ■ Margins increase

- Non-GAAP gross margins increased from 27% (post TPSCo creation) to 40% (Q4'15 target)
- Annual EBITDA run rate of over \$250M

## ■ Strong balance sheet and financial ratios

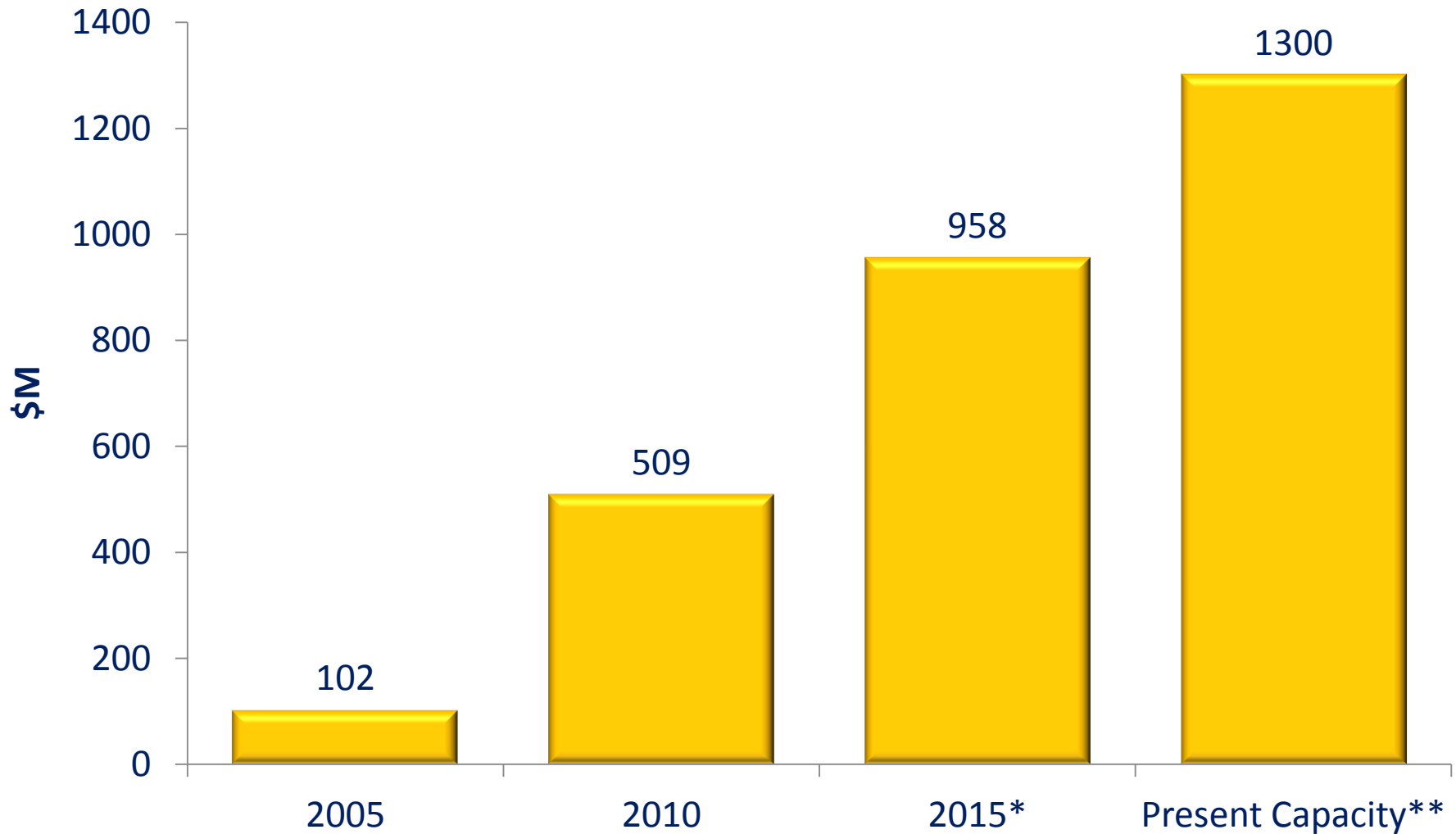
- Debt and net debt reduction of over \$200M
- Net debt/ EBITDA ratio <0.6X

# 2016 Focuses

- Continued revenue growth
  - Special focus on SA new fab and TPSCo 3<sup>rd</sup> party business
- Maximized free cash flow
- Increasing net profit
- Margins growth
- Cap-Ex investments for growth to meet excess customer demand:
  - Customer funded programs for capacity reservation
  - Assured mid to short term ROI
  - Full utilization of potential cross qualification between our fabs



# Annual Revenues



\* based on actual results Q1-Q3'2015 and Q4'15 company's guidance

\*\* Based on existing capacity capability, excluding San Antonio fab

# Worldwide Manufacturing Facilities

**TOWERJAZZ**



Midgal HaEmek, Israel

**6", 150mm, 16K w/m  
CMOS, CIS, Power,  
Discrete  
1 $\mu$ m to 0.35 $\mu$ m**



Midgal HaEmek, Israel

**8", 200mm, 43K w/m  
CMOS, CIS, Power,  
Discrete, MEMS  
0.18 $\mu$ m to 0.13 $\mu$ m Cu**



Newport Beach, USA

**8", 200mm, 24K w/m  
CMOS, CIS, MEMS,  
RF Analog  
0.5  $\mu$ m to 0.13 $\mu$ m**

**TPSCo**



Arai, Japan

**8", 200mm, 14K w/m  
Analog, CIS  
0.13 $\mu$ m to 0.11 $\mu$ m  
Thick Cu RDL**



Tonami, Japan

**8", 200mm, 51K w/m  
Power Discrete,  
NVM, CCD  
0.35 $\mu$ m to 0.15 $\mu$ m**



Uozu, Japan

**12", 300mm, 20K  
w/m (8" equiv.)  
CMOS, CIS, RF  
65nm to 45nm**



# Meeting our strong customer demand

1. **Qualifying TPSCo** on several specialty platforms ✓
  - Enables offloading between our worldwide fabs
  - Opens capacity in Fab2 and Fab3 whilst substantially increasing TPSCo utilization
  - 300mm BSI at TPSCo
2. **Investing in capacity** ✓
  - Self funded expansions in Fab2 and Fab3
  - Customer funded business model (\$45M)
3. **M&A opportunities** for additional capacity ✓
  - Business model to include committed revenue by the seller

# TowerJazz to Expand its Worldwide Manufacturing Capabilities with Proposed Acquisition of Maxim Integrated's Wafer Manufacturing Plant in Texas, US

*San Antonio Analog Fab to Support TowerJazz's Strong Customer Demand and Enable Additional Manufacturing Flexibility*

# San Antonio Wafer Fab Aerial View



# Core TowerJazz Analog Specialty Offering



# TowerJazz Business Units – Specialty Technology Leader



**RF  
& HPA**



**Power**



**CIS**



**MS  
CMOS**



**Aerospace  
& Defense**



**TOPS**



# RF HPA Markets and Solutions



**Wireless Front-Ends**  
RF SOI and SiGe LNA/PA

**High Growth** driven by  
Smartphones and IoT



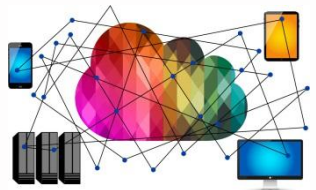
**Wireline Front-Ends**  
High Performance SiGe

**High Growth** driven by  
video, data internet traffic



**mmWave**  
High Performance SiGe

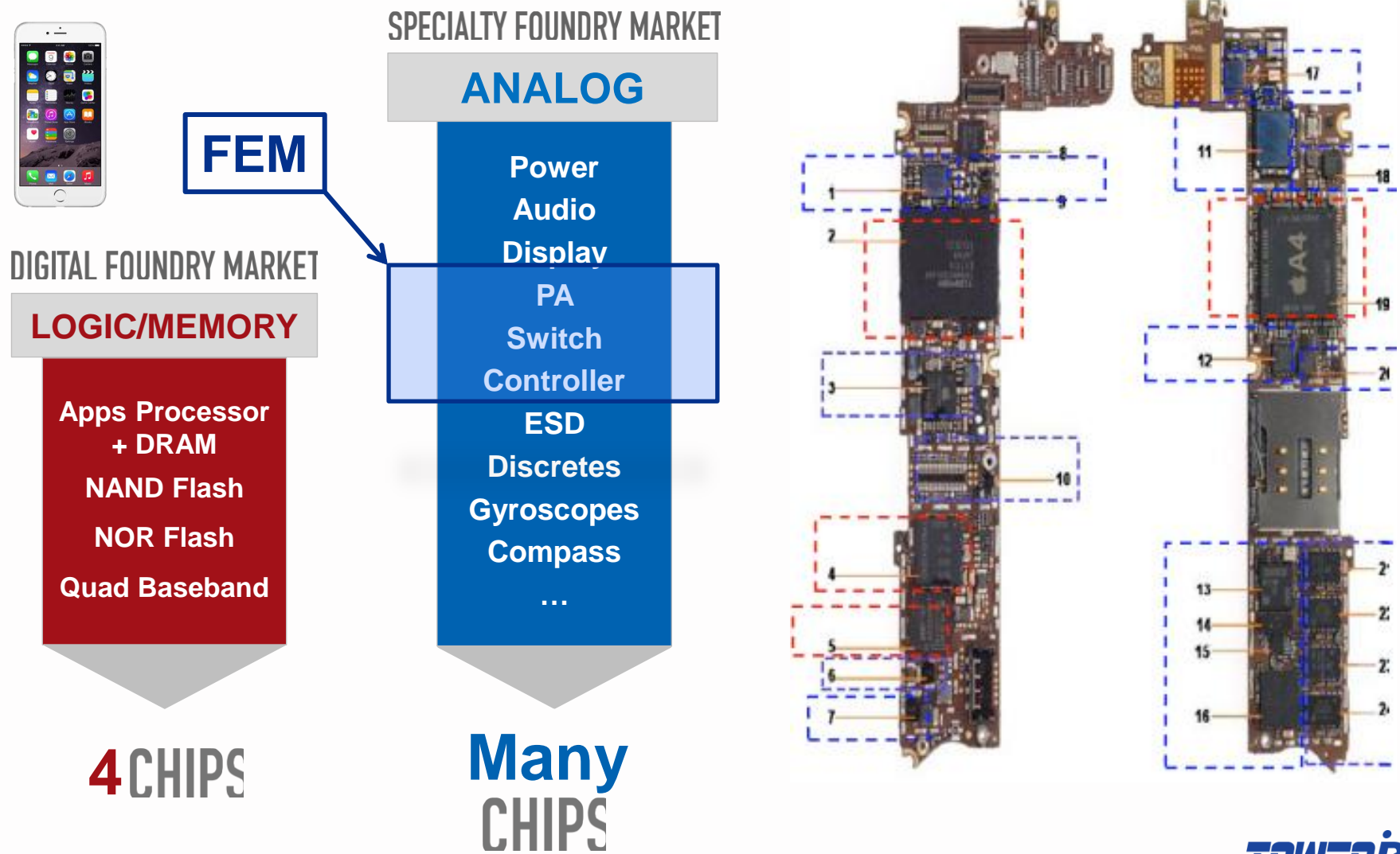
**Emerging Value** driven by  
radar and other high-  
frequency applications



**High Performance Analog**  
Complementary BiCMOS

**Steady Volume** driven by  
cloud-based HDD and  
analog component market

# Analog Market Opportunity



## FEM content from ifixit teardown:

- Skyworks 77802-23 Low Band LTE PAD
- Skyworks 77803-20 Mid Band LTE PAD
- Skyworks 77356-8 Mid Band PAD
- Avago A8020 High Band PAD
- Avago A8010 Ultra High Band PA + FBARs
- RF Micro Devices RF5159 Antenna Switch Module
- Murata 339S0228 Wi-Fi Module

## TowerJazz FEM Solutions:

RF SOI (Switches), SiGe (LNA/PA), RF CMOS (control)



## Market Growth Prospect

- FEM content per phone growing with each generation
- Technology shift (GaAs to SOI/SiGe/CMOS) continues
- TowerJazz technology is in a leading position

# Power Markets and Solutions



## Display, Audio, Touch, Power Management

0.18um BCD Technology

**High Volume** driven by consumer device growth



## Automotive & Communication

0.18um BCD + NVM and digital

**High Value** driven by more integrated power



## LED Lighting

700V Power Technology

**Emerging Market** in low energy lighting for power semiconductors



## Industrial & Infrastructure

High Power Modules

**High Power** motor drivers



# Specialty CIS Key Markets and Solutions

*Technology, Flexibility, Experience and Commitment allows our customers to bring to the market the best in class products*

## Professional Photography

Highest requirements for image quality  
Large sensors, very high resolution,  
demanding frame rate  
Very low defect count  
Very high sensitivity, dynamic  
range & low noise



## Medical X-Ray

Market Leader for dental x-ray CMOS  
Supplying all Tier-1 vendors  
Smallest endoscopy solution



## Industrial & High Speed

High speed and high accuracy  
Global shutter technology  
“Intelligent” pixels  
2D and line sensors



## Automotive & Security

High sensitivity and high dynamic range  
High NIR sensitivity  
Linear HDR for color imagers



## 3D Gesture Control

Design wins with market leaders  
High volume and yet good margin market  
High NIR sensitivity  
ToF and structured light solutions





# Market MEGATRENDS driven by Internet of Things

Key megatrends driving rapid growth in Analog/Mixed-Signal applications



**GREEN** EVERYTHING  
Energy Efficiency



**WIRELESS** EVERYTHING  
Seamless Connectivity



**SMART** EVERYTHING  
Embedded Systems

## Analog/Mixed-Signal Applications

**High-Performance  
Analog**

**Power  
Management**

**RF**

**Sensors  
(Imaging,  
MEMS)**

IoT demands diverse silicon chips with integrated sensors, memories, processors, energy harvesting blocks, communication means, interfaces and security systems.

This will extend the markets of mobile applications, power management and data processing, opening new business opportunities for TowerJazz.

# 10 Year Anniversary

Financials	2005	Present Run Rate
Revenues \$M	100	1,000
Net Debt \$M (exc. In the money converts)	550	70
Market Cap \$M	150	1,500

Operations*	2005	Present Run Rate
# of Fabs	2	7
Locations	1	3 continents/ 6 locations
Capacity KWPM	290	2,350
Employees	900	4,500
Customers	~30	>300

\* Including SA Fab

## Well Positioned in Growth Markets

- RF SOI and SiGe for wireless smartphone, IoT, and data networks
- CMOS Image Sensor and 3D Gesturing
- Power management and conversion
- Strong available capacity in TPSCo and investing in additional capacity

## Driving Strong Financial Performance

- Strong revenue growth throughout 2015 with expected growth in 2016
- Sustainable business and financial model for margins and net profit growth
- Strong balance sheet and financial ratios
- Free cash flow “state of mind”

***TOWERjazz***

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