Leading the Global Communication

win | SEMICONDUCTORS

# WIN Semiconductors

***Wireless • Information • Networking***

## 2012 Third Quarter Investor Conference

**October 30, 2012**

# Safe Harbor Notice

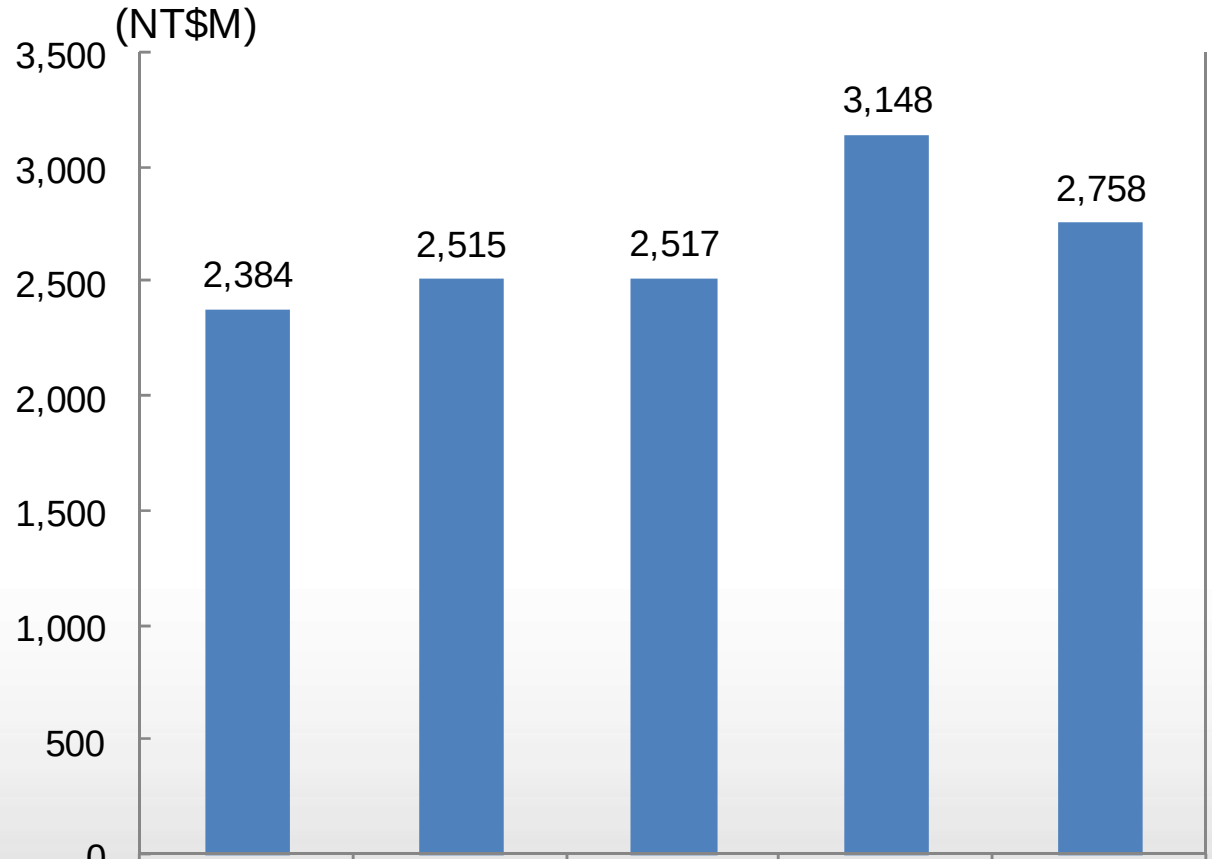
- This presentation contains certain forward-looking statements that are based on current expectations and are subject to known and unknown risks and uncertainties that could cause actual results to differ materially from those expressed or implied by such statements.
- Except as required by law, we undertake no obligation to update any forward – looking statements, whether as a result of new information, future events or otherwise.

# Outline

- ✓ Financial Performance
- ✓ Company Overview
- ✓ Market and Industry Dynamics
- ✓ Competition from Silicon
- ✓ Summary
- ✓ Q&A

# Financial Performance

# Revenue Trend - Quarterly




| | 3Q'11 | 4Q'11 | 1Q'12 | 2Q'12 | 3Q'12 |
|---|---|---|---|---|---|
| Net Revenues | 2,384 | 2,515 | 2,517 | 3,148 | 2,758 |
| QoQ | 10% | 6% | 0.1% | 25% | -12% |
| YoY | 19% | 47% | 37% | 46% | 16% |

# Consolidated Income Statement - Quarterly

| (NTD M$) | 3Q'11 | 2Q'12 | 3Q'12 | QoQ | YoY |
|---|---|---|---|---|---|
| **Net revenue** | **2,384** | **3,148** | **2,758** | **-12%** | **+16%** |
| Gross profit | 807 | 1,014 | 998 | -2% | +24% |
| *Gross margin (%)* | *34%* | *32%* | *36%* | | |
| Operating expenses | (225) | (174) | (270) | +55% | +20% |
| *Operating expenses rate (%)* | *-9%* | *-6%* | *-10%* | | |
| **Operating income** | **582** | **840** | **728** | **-13%** | **+25%** |
| *Operating margin (%)* | *24%* | *27%* | *26%* | | |
| Non-operating incomes (expenses), net | (355) | (320) | (71) | | |
| Income before income tax | 227 | 520 | 657 | +26% | +189% |
| Income tax (benefit) expense | - | (94) | (106) | +12% | n.a. |
| **Net income** | **227** | **426** | **552** | **+30%** | **+143%** |
| *Net margin (%)* | *10%* | *14%* | *20%* | | |
| **EPS (NT$)** | **0.36** | **0.66** | **0.85** | **+29%** | **+136%** |
| | | | | | |
| Annualized ROE(%) | 10% | 16% | 21% | | |
| Approx. Utilization (%) | 87% | 91% | 80% | | |
| Depreciation | 246 | 311 | 318 | | |
| CAPEX | 520 | 1,080 | 1,426 | | |

# Consolidated Income Statement - Year-to-date

| (NTD M$) | 1Q-3Q'11 | 1Q-3Q'12 | YoY |
|---|---|---|---|
| **Net revenue** | **6,386** | **8,423** | **+32%** |
| Gross profit | 2,023 | 2,657 | +31% |
| *Gross margin (%)* | *32%* | *32%* | |
| Operating expenses | (661) | (892) | +35% |
| *Operating expenses rate (%)* | *-11%* | *-11%* | |
| **Operating income** | **1,362** | **1,765** | **+30%** |
| *Operating margin (%)* | *21%* | *21%* | |
| Non-operating incomes (expenses), net | (702) | (121) | -83% |
| Income before income tax | 661 | 1,644 | +149% |
| Income tax (benefit) expense | (1) | (211) | |
| **Net income** | **660** | **1,433** | **+117%** |
| *Net margin (%)* | *10%* | *17%* | |
| **EPS (NT$)** | **1.06** | **2.21** | **+108%** |
| | | | |
| Annualized ROE(%) | 10% | 18% | |
| Approx. Utilization (%) | 90% | 80% | |
| Depreciation | 722 | 936 | |
| CAPEX | 3,077 | 2,768 | |

# Investment Gain or Loss

| (NTD M$) | 3Q'12 | 1Q-3Q'12 |
|---|---|---|
| Dividend income | 28 | 29 |
| Investment loss recognized under equity method | (19) | (68) |
| Loss on valuation of financial assets, net | (42) | (19) |
| Gain on disposal of investments, net | 4 | 159 |
| Impairment loss | - | (101) |
| **Total** | **(29)** | **(0.6)** |

# Consolidated Balance Sheet

| (NTD M$) Major Items | 2011/9/30 | | 2012/9/30 | |
|---|---|---|---|---|
| | $ | % | $ | % |
| Cash and cash equivalents | 740 | 4% | 986 | 5% |
| Financial assets at fair value through porfit or loss | 829 | 5% | 944 | 4% |
| Notes and accounts receivable, net | 801 | 5% | 859 | 4% |
| Inventories | 1,877 | 10% | 2,622 | 12% |
| Funds and investments | 1,611 | 9% | 1,448 | 7% |
| Net property, plant and equipment | 11,170 | 62% | 13,098 | 62% |
| **Total Assets** | **18,191** | **100%** | **21,095** | **100%** |
| | | | | |
| Current liabilities | 3,341 | 18% | 4,343 | 21% |
| Long-term borrowings | 5,687 | 32% | 5,707 | 27% |
| **Total Liabilities** | **9,031** | **50%** | **10,056** | **48%** |
| **Total Stockholders' Equity** | **8,946** | **50%** | **11,039** | **52%** |
| Book value per share (NT$) | 14.35 | | 17.02 | |
| **Key Indices** | | | | |
| Current ratio | 149% | | 145% | |
| Debt ratio | 50% | | 48% | |

Note: Current ratio = Current assets / Current liabilities
Debt ratio = Total liabilities / Total assets

# After GDR

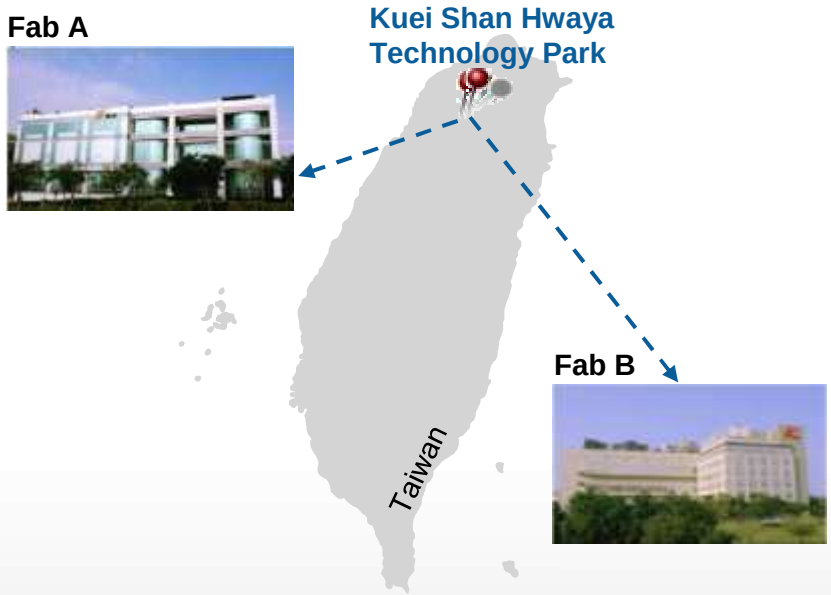
- New Shares Issued: 100,000,000 shares
- Capital Stock: From 648,703,928 to 748,703,928 shares
- Use of Proceeds: (1) Capacity Expansion
  (2) Procurement of Raw Material
- EPS Dilution: 3.1% for Y2012 and 13.4% for Y2013
- Financial Impact:
  - ✓ Working Capital ↑
  - ✓ Debt Ratio ↓
  - ✓ Current Ratio ↑
  - ✓ ROE ↑

# Company Overview

# Corporate Profile

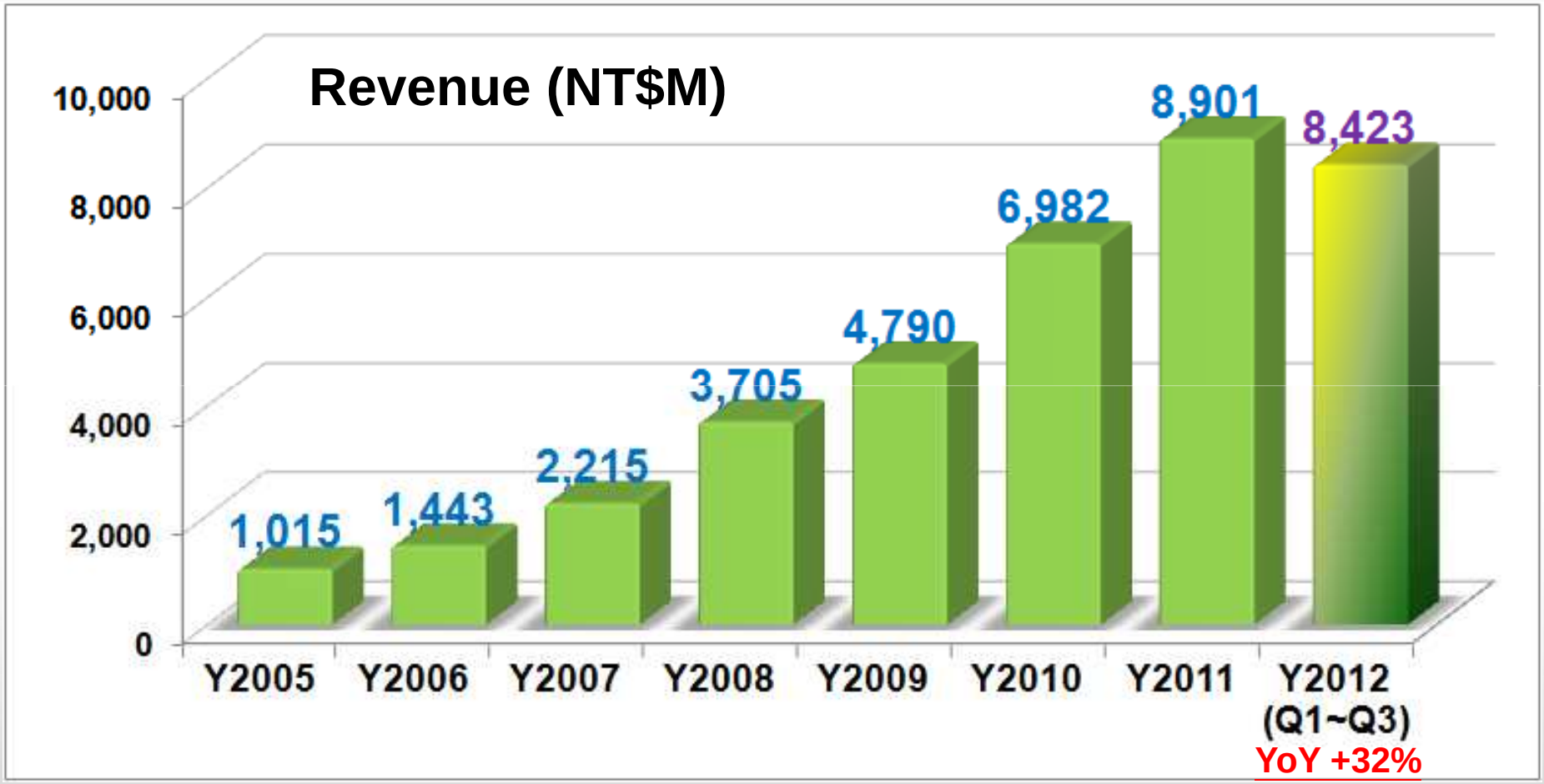
- Founded in Oct. 1999, Taipei, Taiwan
- Listed in GTSM on Dec. 13, 2011 (Code: 3105)
- 1,471 employees as of Sep. 30, 2012
- Two installed 6-inch GaAs (Gallium Arsenide) fabs with monthly capacity of 22,500 wafers expected in 2012
- The largest pure-play GaAs wafer foundry service provider in the world (54% market share in GaAs foundry as of Dec 2011)
- Manufacturing semiconductor chips for wireless communication — delivered 2.2bn RF chips for wireless communications in 2011

## Volume Production Sites




# Compound Semiconductor Applications

# Business Growth




- WIN 2005-2011 CAGR is 44%
- GaAs industry average CAGR is 13% in the same period of time

# The 4th Generation Wireless Communication

**2G**

**14.4 Kbps**

**Voice**

**3G**

**14.4 Mbps**

**Internet Data**

**4G**

**1 Gbps**

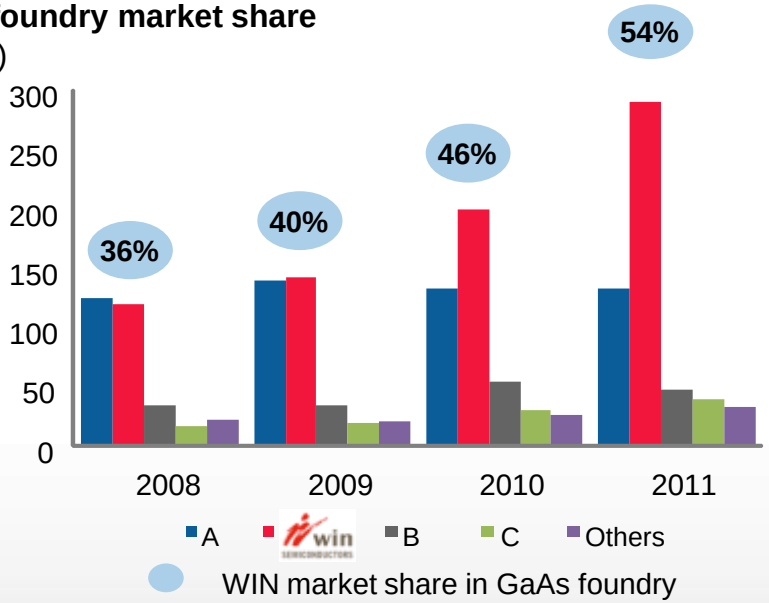
**Multimedia (Video)**

# Industry Leading GaAs Foundry with Strong Growth Momentum

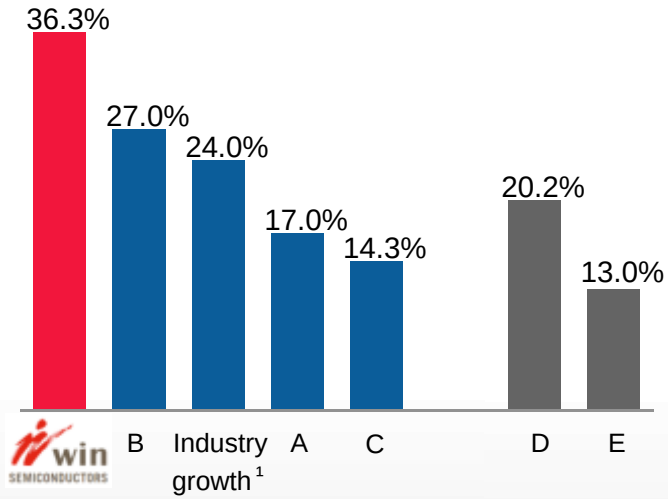
**#1** *Largest GaAs semiconductor foundry in the world*

**#1** *Fastest growing GaAs and foundry player*

**GaAs foundry market share**
(US$M)




**Net revenue growth (CAGR in 2009–2011)**



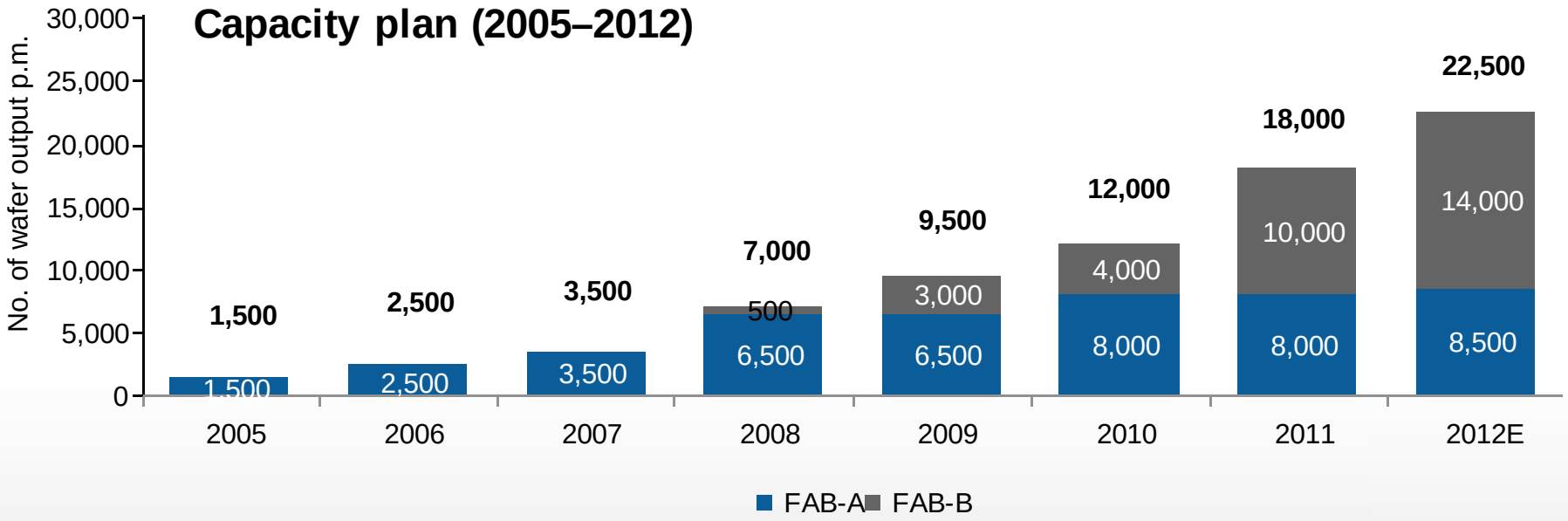

- ☑ Fastest growing semiconductor foundry with consistent share gains
- ☑ Shipped approximately 2.2bn chips, accounting for 20% of worldwide demand
- ☑ Pure-play conflict-free model attracts both IDMs and fabless customers

Note 1: Industry growth represents GaAs foundry industry growth

*Source: Strategy Analytics, Company filings, management estimates*

# Industry Leading GaAs Foundry with Strong Growth Momentum

**#1** *Largest manufacturing capacity among GaAs foundries in the world*




- ☑ Monthly wafer output will be reaching 22,500 in the end of 4Q'12
- ☑ Unparalleled manufacturing capacity a key competitive advantage to attract orders
- ☑ Continued trend of IDMs going fabless and fablite

# Exposure to Attractive End Markets with Strong Long-term Growth Outlook

**WIN plays in 3 LARGE and ATTRACTIVE end markets**

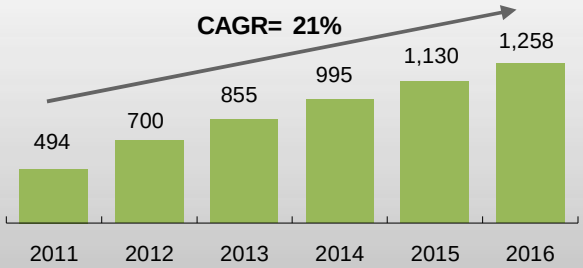
Handset

WiFi (WLAN)

Infrastructure

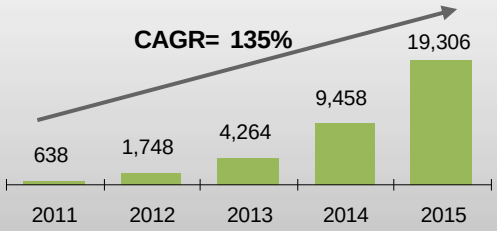
**Strong growth continues in the smartphone market**

*Worldwide smartphone shipment (m units)*



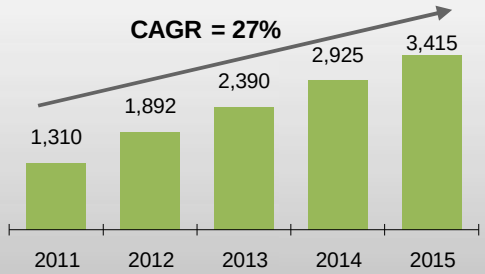

**Cloud computing and content boost growth of data traffic**

*Mobile internet traffic (petabyte/month)*



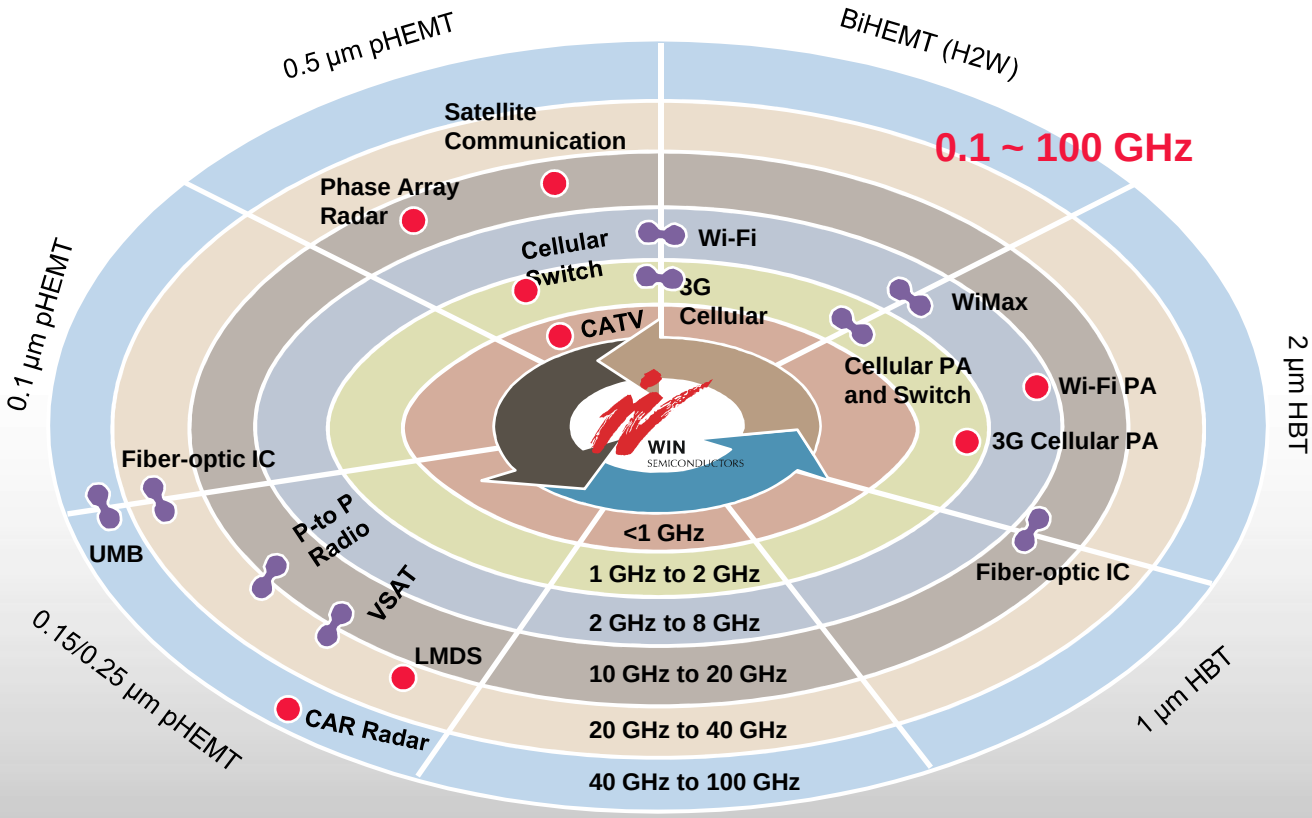

**Double-digit growth driven by WiFi in mobility devices and consumer electronics**

*Wireless LAN shipments (m units)*



# Broad Portfolio of Advanced Technologies

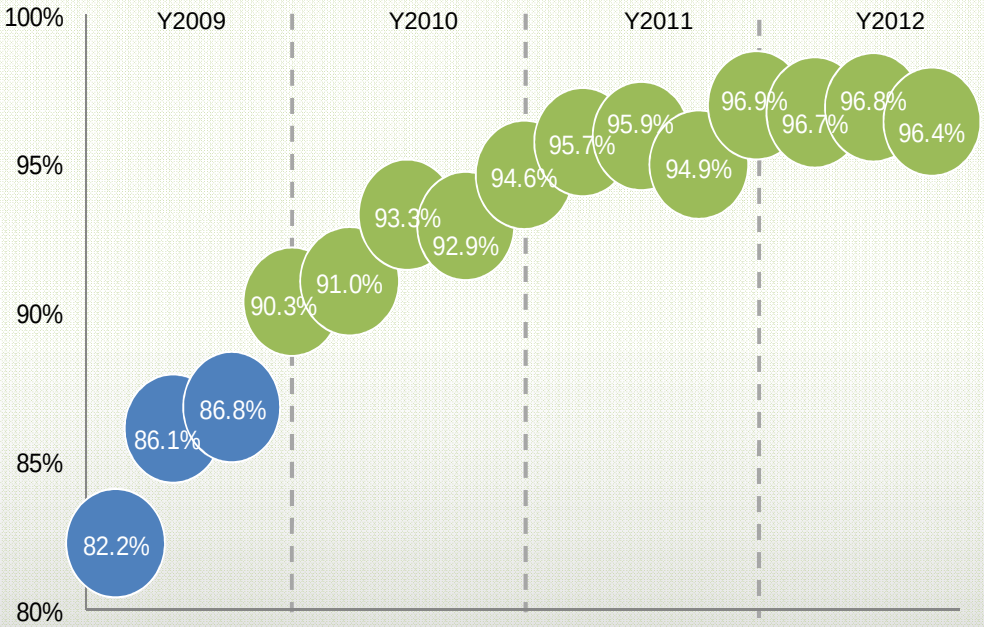
**The most comprehensive technology portfolio in the industry enables customers to develop optimized products for a wide range of applications**




- ☑ Dominant market share for high-performance HBT used in LTE PAs
- ☑ First and only foundry worldwide to commercially develop 0.1µm pHEMT on 6” GaAs wafer
- ☑ Industry leading 0.15–0.25µm pHEMT technology
- ☑ Leading BiHEMT technology for advanced integrated PA/switch chips
- ☑ Supports broad range of products such as PAs (from 50MHz–100GHz), switches, and fiber optic IC
- ☑ Developing GaN for high power devices (4G base station)

# …and Superior Manufacturing Capabilities

**Company wide production yield**




Note: Production yield defined as total units completed/(total units completed + units disposed)

- ☑ Largest GaAs capacity in the industry
- ☑ Longest history of production on 6” wafer in industry
  - over 10 years experience in GaAs
- ☑ Short cycle times to help customers shorten products’ time to market
- ☑ Excellent of track record of on-time delivery
- ☑ One of the highest production yields in industry

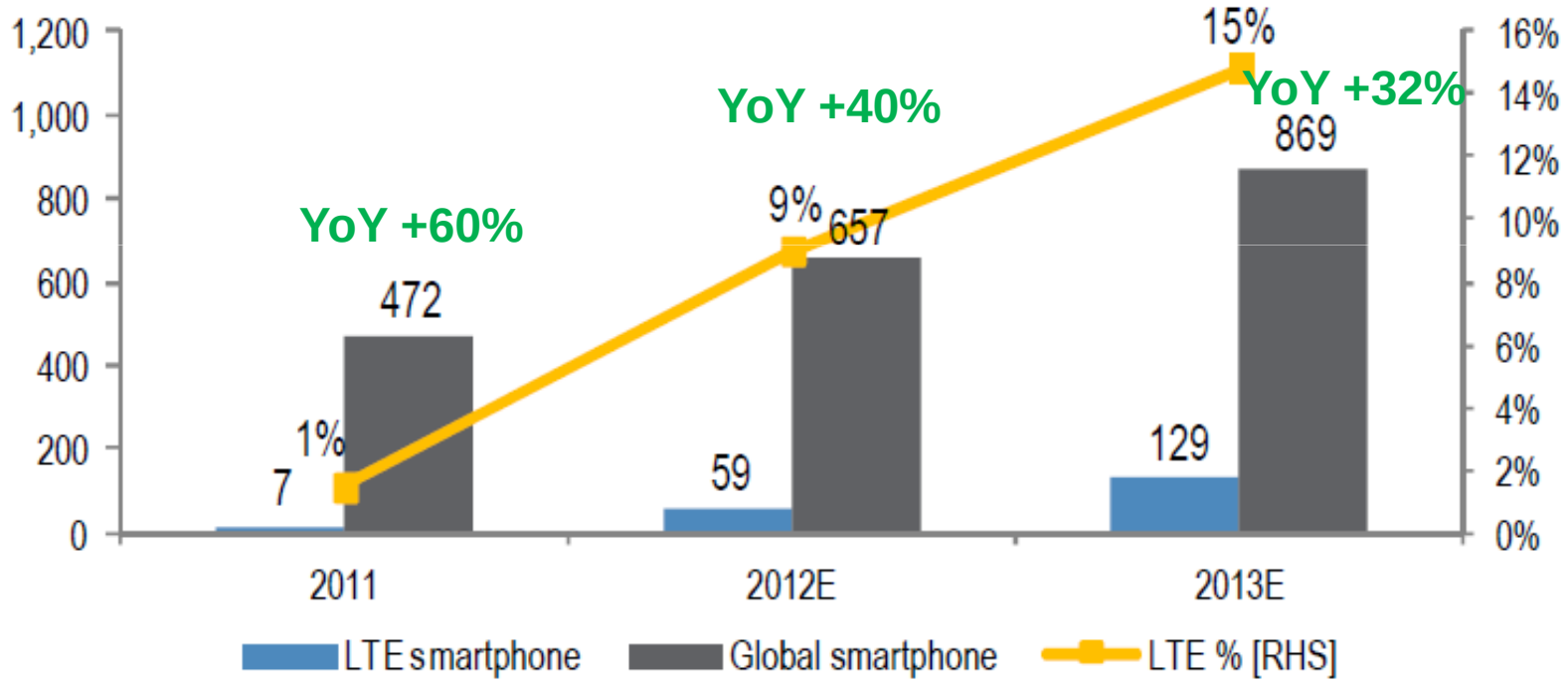
**Manufacturing capacity, process reliability, product quality and operation efficiency enables WIN to manage ASP erosion**

# Market and Industry Dynamics

# Total Smartphone and 4G LTE Smartphone Penetration Forecast

## Figure 9: LTE market as % of total smartphone in unit

Unit in shipment millions, %

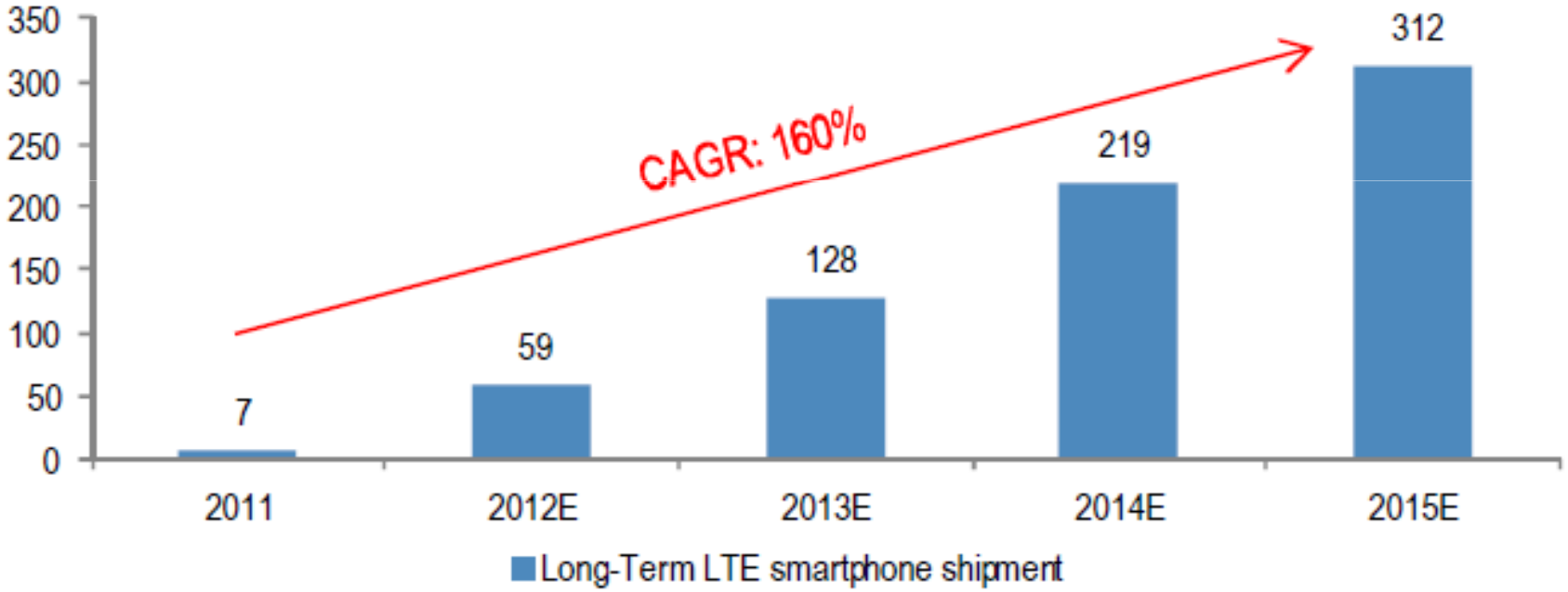



Source: Company data, J.P. Morgan estimates. *assuming base case scenario

# LTE Smartphone Demand Forecast

Figure 5: LTE smartphone demand forecast (2011-2015E)

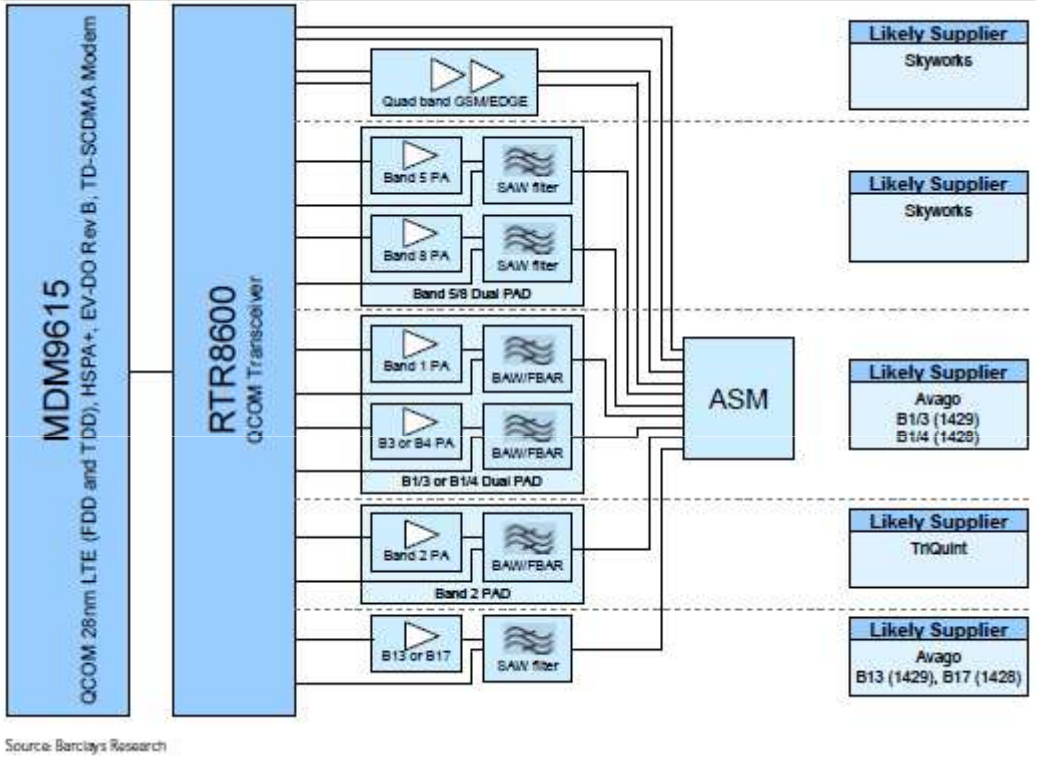
Unit in millions




Source: J.P. Morgan estimates

# iPhone 5 Block Diagram Estimate

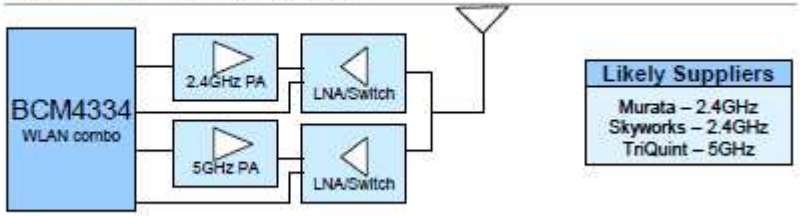
Figure 3: iPhone 5 Block Diagram Estimate




Source: Barclays Research

Figure 4: iPhone 5 Block Diagram Estimate

**GPS**
**LNA**




Source: Barclays Research

iPhone 5

- **Increasing frequency bands per phone – means more PA's and switches.**
- **More types of radio per phone – cellular, Wi-Fi, GPS, BT, mobile TV, … etc.**
- **Increased GaAs contents.**

# Trend of GaAs Content Increase

iPhone 4S

GPS

LNA

2G GSM 4-bands

PA PA

GPS

LNA

iPhone 5

| 2G GSM 4-bands | 3G UMTS 4-bands | Wi-Fi 2.4GHz band | 3G UMTS 4-bands | 4G LTE 2-bands | Wi-Fi 2.4&5GHz bands |
|---|---|---|---|---|---|
| PA | PA | PA | PA | PA | PA |
| PA | PA | LNA | PA | PA | LNA |
| | PA | Switch | PA | | Switch |
| | PA | | PA | | |

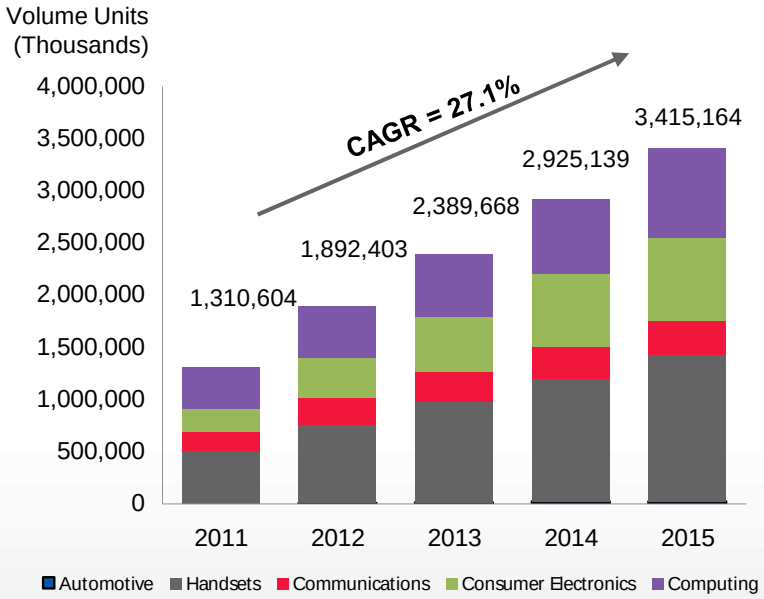
# 3G/4G Band Plan

| 3GPP Band | Nicknames | Frequencies(MHz) TX | RX | EU | NA | APAC | CHINA | INDIA | JAPAN | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| BAND-1 | 2.1GHZ | 1920-1980 | 2110-2170 | ● | | ● | ● | ● | ● | UMTS main band for APAC, EU) |
| BAND-2 | PCS | 1850-1910 | 1930-1990 | | ● | | | | | UMTS main band for NA |
| BAND-3 | DCS(UMTS1800) | 1710-1785 | 1805-1880 | ● | | ● | | | | Mainly for FDD LTE |
| BAND-4 | AWS | 1710-1755 | 2110-2155 | | ● | | | | | For UMTS of US T-Moble |
| BAND-5 | US Cellular | 824-849 | 869-894 | | ● | ● | | | | UMTS for NA(AT & T etc) |
| BAND-7 | 2.6GHz | 2500-2570 | 2620-2690 | ● | | ● | | | | LTE main band for EU |
| BAND-8 | EGSM(UMTS900) | 880-915 | 925-960 | ● | | ● | | | ● | UMTS 900 for EU, APAC |
| BAND-13 | Upper 700MHz C Block | 777-787 | 746-756 | | ● | | | | | US LTE: Verizon |
| BAND-17 | - | 704-716 | 734-746 | | ● | | | | | US LTE: AT & T |
| BAND-20 | Digital dvidend: Europe | 832-862 | 791-821 | ● | | | | | | Digital dvidend: Europe |
| For 4G | Digital dvidend: APAC | 756-806 | 698-748 | | | ● | | | ● | Digital dvidend: APAC 718-748/773-803MHz in JAPAN |
| BAND-22 | LTE-Advanced | 3510-3590 | 3410-3490 | ● | ● | ● | ● | ● | ● | |
| TDD Band-34 | TD-SCDMA | 2010 | 2025 | | | | ● | | | China Mobile |
| TDD Band-38 | TD-LTE | 2570 | 2620 | | | | ● | | | China Mobile |
| TDD Band-39 | TD-SCDMA | 1880 | 1920 | | | | ● | | | China Mobile |
| TDD Band-40 | TD-LTE | 2300 | 2400 | ● | | ● | ● | ● | | China Mobile/India/Russia/Malaysia |
| TDD Band-41 | TD-LTE | 2496 | 2690 | | ● | | | | ● | Clearwire Including Softbank XGP(2550.1 - 2569.9MHz) |

Estimate by Navian

# Growth Drivers — WiFi and Changing Standards

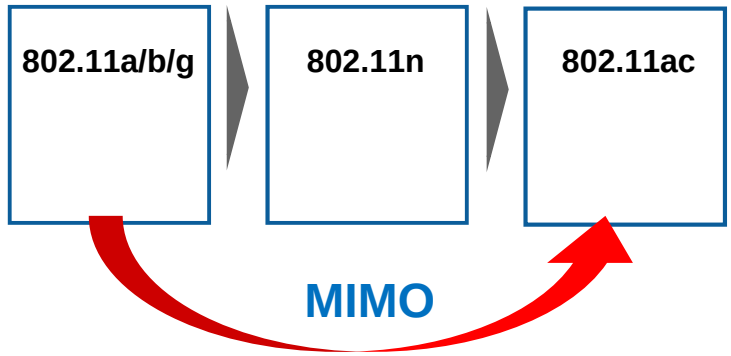
## Wireless LAN shipments




- Double-digit growth for WiFi in handsets will continue through 2015
- In 2013 and 14, WiFi in consumer electronics devices will accelerate and drive the next phase of growth

## Estimated number of bands per mobile device

**Number of PAs for different WiFi standards**




**More PA, LNA, and switch**

- 802.1n standard supports 1-4 concurrent data streams and can support bandwidths of 450 Mbps to 600 Mbps
- Next generation of WiFi standards, 802.11ac is a whole-house technology that supports a max throughput of 1 Gbps; while 802.11ad is an in-room technology that supports up to 7 Gbps

*Source: Gartner, June 2011*

# Non-Handset Mobile Devices

## >300M devices/year

Photoframes

Personal Navigation Devices

Notebooks

Netbooks

Ultra Mobile PCs

Tablets (small touchsreen devices)

As subscriber penetration slows down in mature markets, operators are looking at other devices to which they can add mobile broadband.

The largest segment over the next 5 years will be notebook PCs

E-Books

M2M

Appliances

Cameras & Camcorders

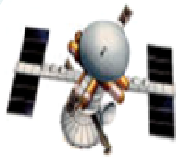
Portable Gaming Consoles

Portable Media Players

STRATEGY ANALYTICS
GaAs & COMPOUND SEMICONDUCTORS

# Summary of Growth Momentum

Wi-Fi widely used in cellular phone, notebook, tablet PC, home entertainment



P-t-P, satellite, fiberoptic communications

4G LTE , femto cell, and Wimax

**Short Term**: Fast growth of 3G Smartphones (30~40% YoY)

**Mid-Term**:

1. Entry level Smartphones replacing 2G feature phones.
2. 4G LTE launch.
3. 802.11ac MIMO

**Long Term**:

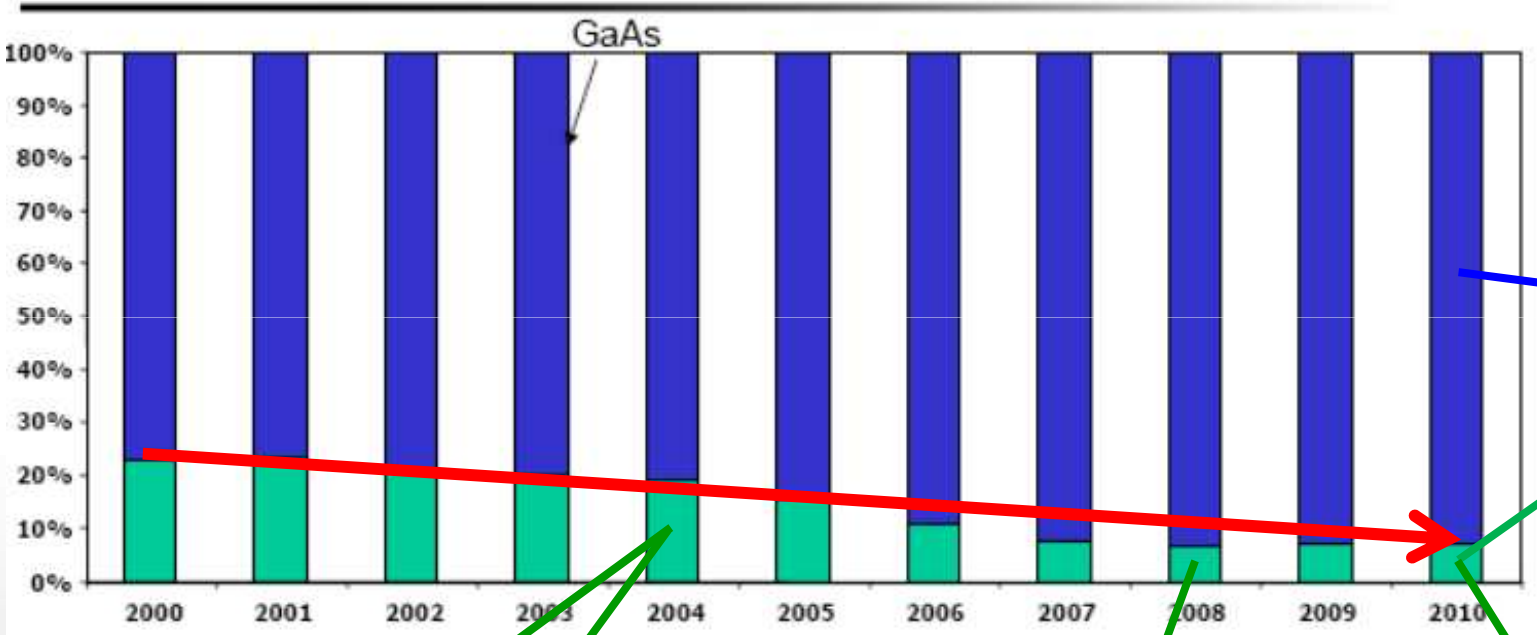
Machine-to-Machine (M2M) . Smart grid, smart traffic, smart city… etc.

# Competition from Silicon

# Threat from Silicon?

STRATEGY ANALYTICS

## GaAs versus Si in the Handset PA




**GaAs**

**Si**

**5.4% in 2011**

**First monolithic CMOS amplifier powers GSM/GPRS market**

**Silicon Labs launched the world's smallest power amplifier for handset**

**CMOS PA Paves the Way For A Single-Chip Cell Phone**
**- Who said you can't put a cell-phone power amplifier on a CMOS chip?**

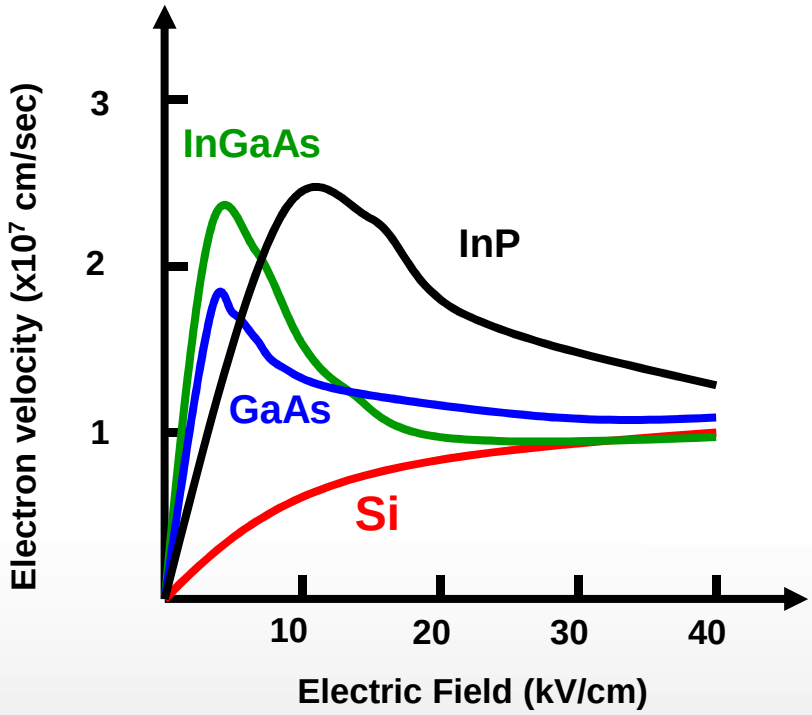
**First CMOS 3G power amp heads for Mobile World Congress**

# Why GaAs?

Electron mobility  Hole mobility

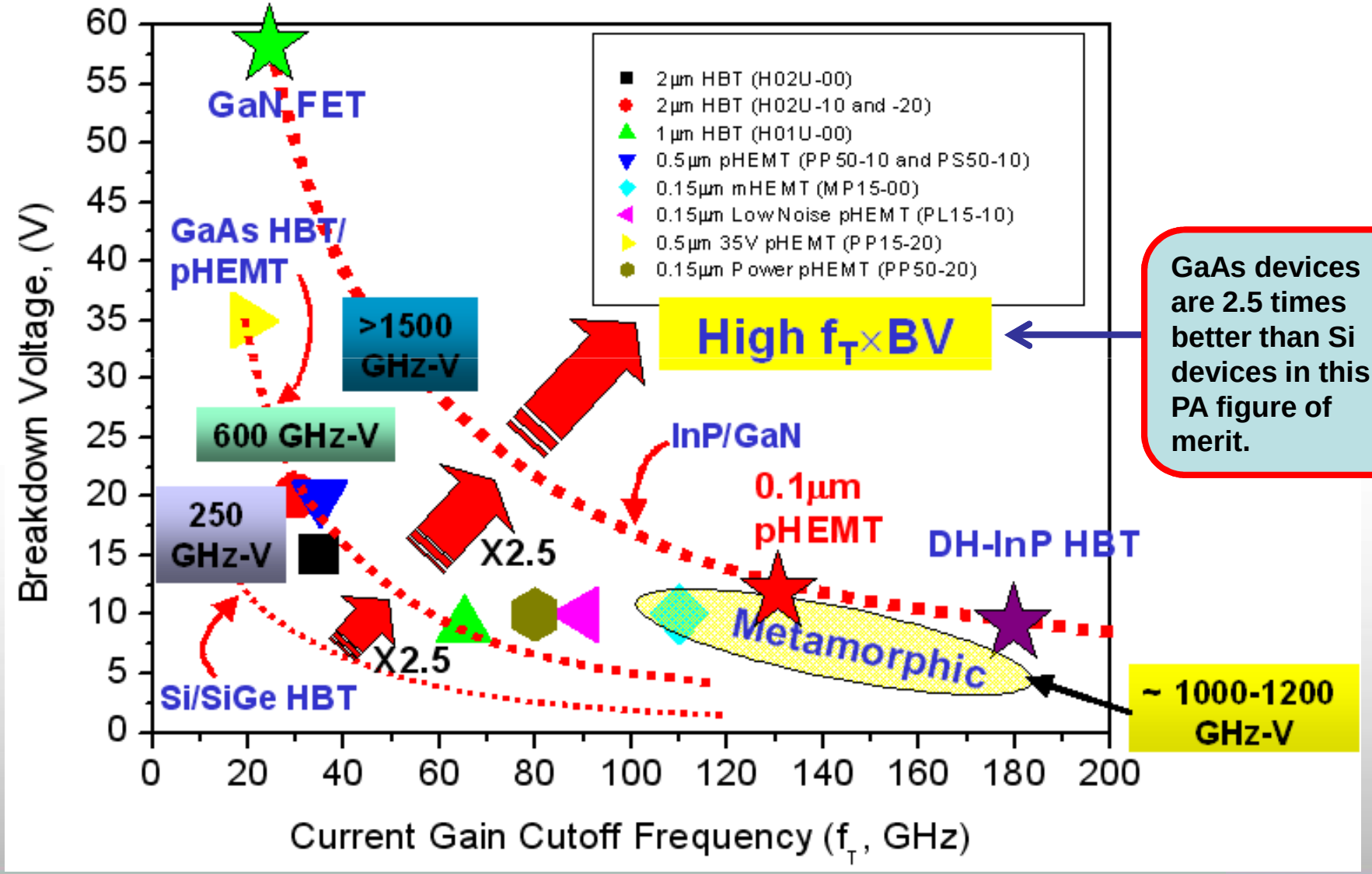
| Low-doped only | $\mu_n$ (cm²/V-Sec) | $\mu_p$ (cm²/V-Sec) |
|---|---|---|
| Si | 1360 | 460 |
| GaAs | 8000 | 320 |

Mobility is a measure of ease of carrier motion within a semiconductor crystal.




- The electrons move 5 times faster in GaAs than in silicon.
- This translates to faster speed for GaAs-based transistors and circuits when compared to a silicon counterpart.

# Why GaAs is Better than Si for PA?




**GaAs devices are 2.5 times better than Si devices in this PA figure of merit.**

# GaAs is the Technology of Choice for Modern Smartphone PA

- GaAs has better power efficiency, higher linearity, and lower noise for GHz wireless applications.
  - Faster data rate
  - More reliable (due to higher breakdown voltage than Si PA)
  - Longer talk time
- GaAs PA solution has better C/P value than Si solution.
- GaAs has significantly lower product development cost and shorter product development cycle time.
- GaAs has shorter production cycle time (typically 4-6 weeks vs. Si CMOS 8-12 weeks).

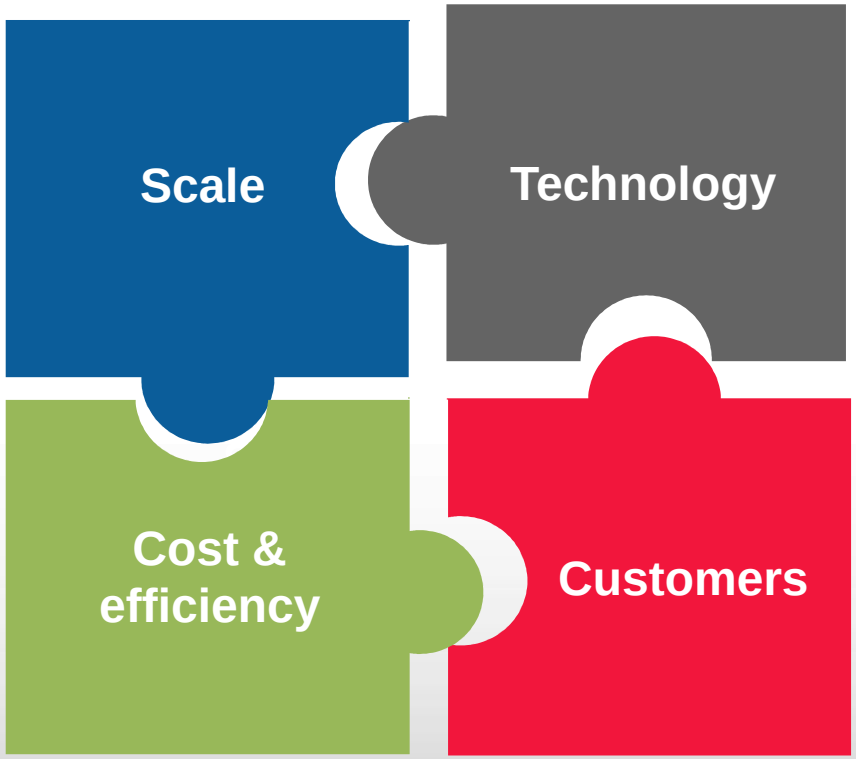
# The WIN Strategy

A

**Invest in capacity to capture market growth and maintain leadership**

B

**Invest in technology to maintain competitive edge and penetrate into new markets**




D

**Leverage on technology and manufacturing expertise for continuous cost & efficiency improvement**

C

**Grow and acquire new customer base in existing and new markets**

# Summary

- In 3Q 2012, WIN has reached the 2nd highest record quarterly revenue with significantly better gross margin, net income and ROE for both QoQ and YoY.
- We continue to see the GaAs industry and market are growing rapidly and the value chain is moving toward a very healthy direction.
- Mobile devices (smartphones, tablets, … etc.) are major drivers for the growth of GaAs and GaAs content in each mobile device is growing >20% CAGR.
- WIN has a solid track record to exceed the average GaAs industry growth rate.
- The silicon threat to GaAs is very limited in low end phone.

# Q & A

For more information regarding WIN
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For all inquiries, suggestions, and comments
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Leading the Global Communication

SEMICONDUCTORS CORP. | 穩懋半導體