

# Exane BNP Paribas 18<sup>th</sup> European CEO Conference

Paris, 15 June 2016

Dominik Asam, CFO



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1 Infineon at a glance and shareholder value

2 Growth drivers

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## **Disclaimer:**

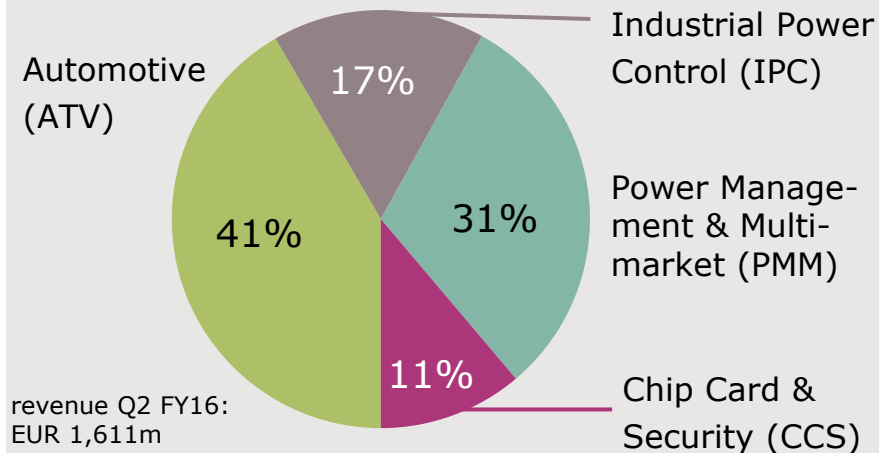
This presentation contains forward-looking statements about the business, financial condition and earnings performance of the Infineon Group.

These statements are based on assumptions and projections resting upon currently available information and present estimates. They are subject to a multitude of uncertainties and risks. Actual business development may therefore differ materially from what has been expected.

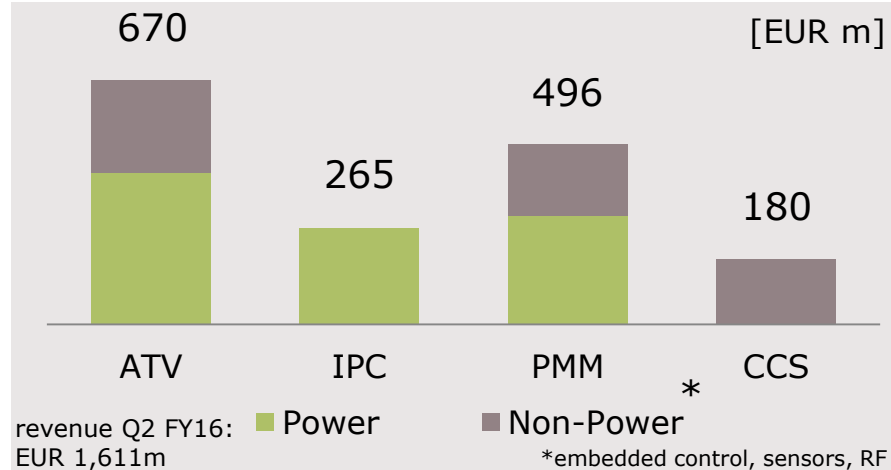
Beyond disclosure requirements stipulated by law, Infineon does not undertake any obligation to update forward-looking statements.

# Infineon at a glance

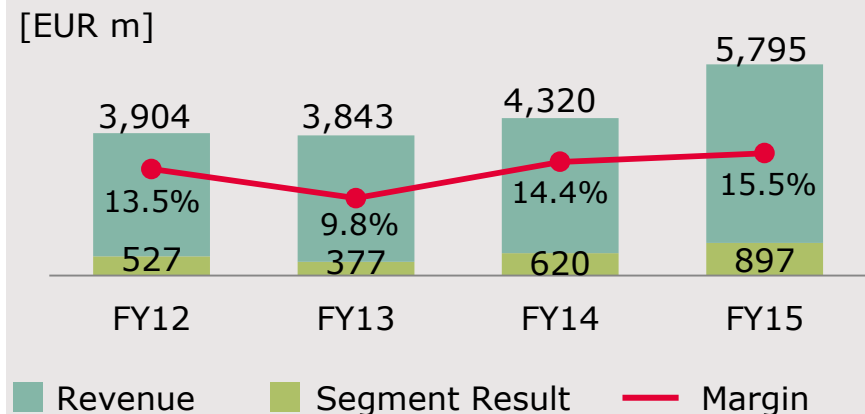
## Business Segments



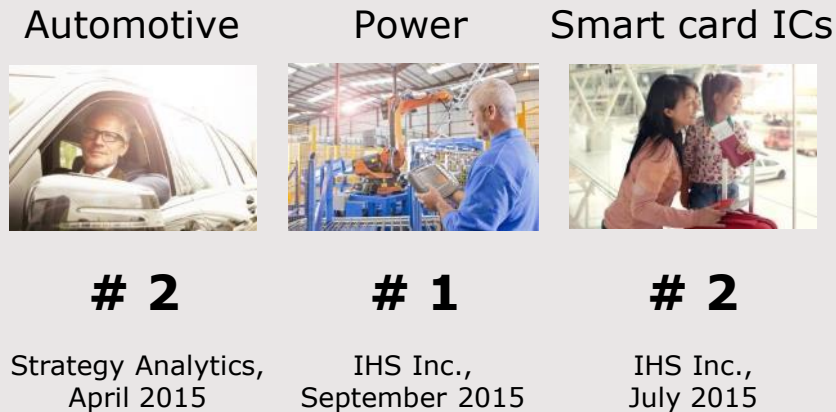
## Power represents ~60% of revenue



## Financials



## Market Position



# Technology leadership and system understanding fosters growth and profitability



## Competitive advantages

System leader in  
Automotive

#1, system and  
technology leader in  
Power

Leader in  
Security Solutions

## Average-cycle financial targets

Revenue Growth:  
**~8%**

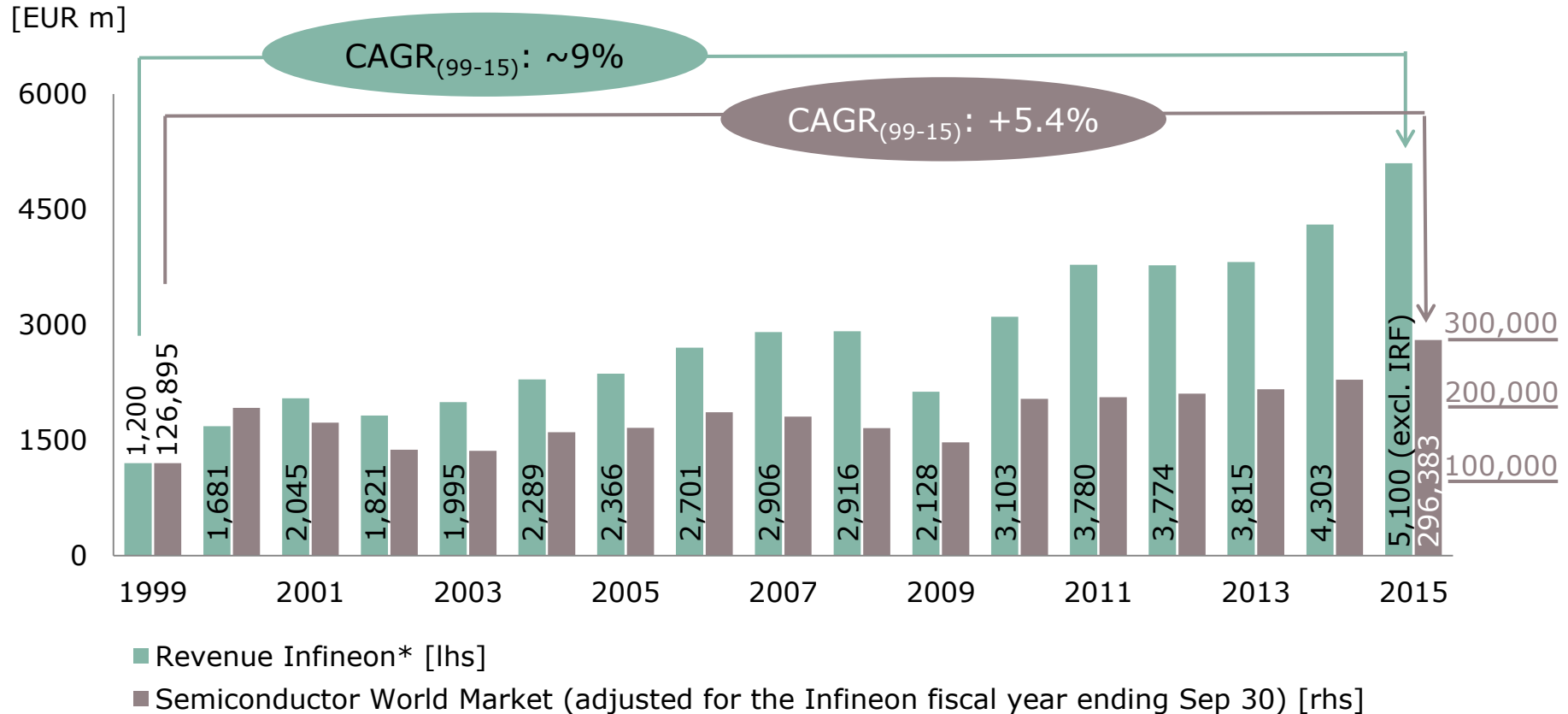
Segment Result Margin:  
**~15%**

Investment-to-Sales:  
**~13%**

(Capex\*: ~11%; capital. R&D\*: ~2%)

\* Infineon reports under IRFS

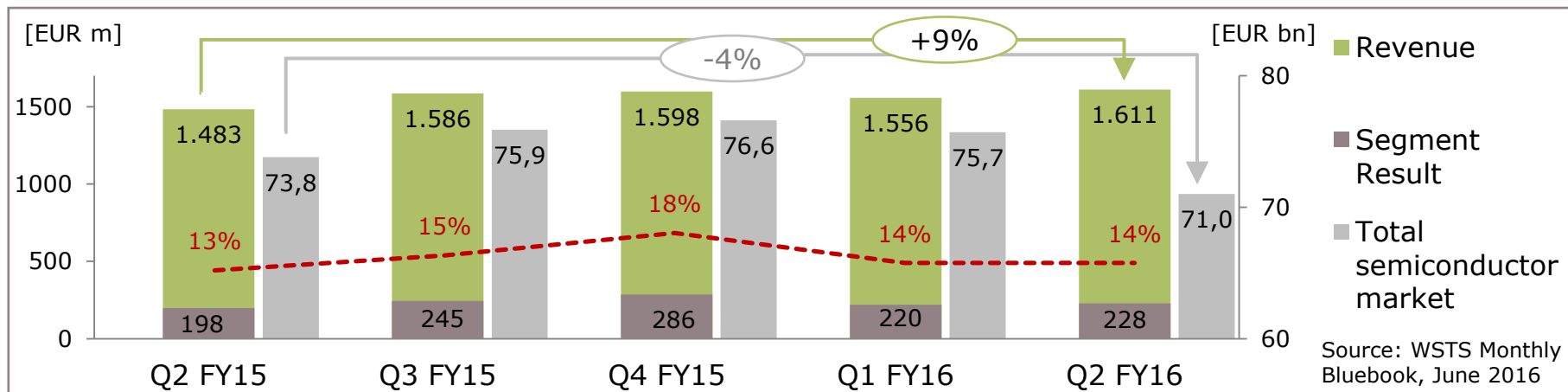
# Infineon's organic revenue growth (excl. IRF) continuously outperformed total semi market



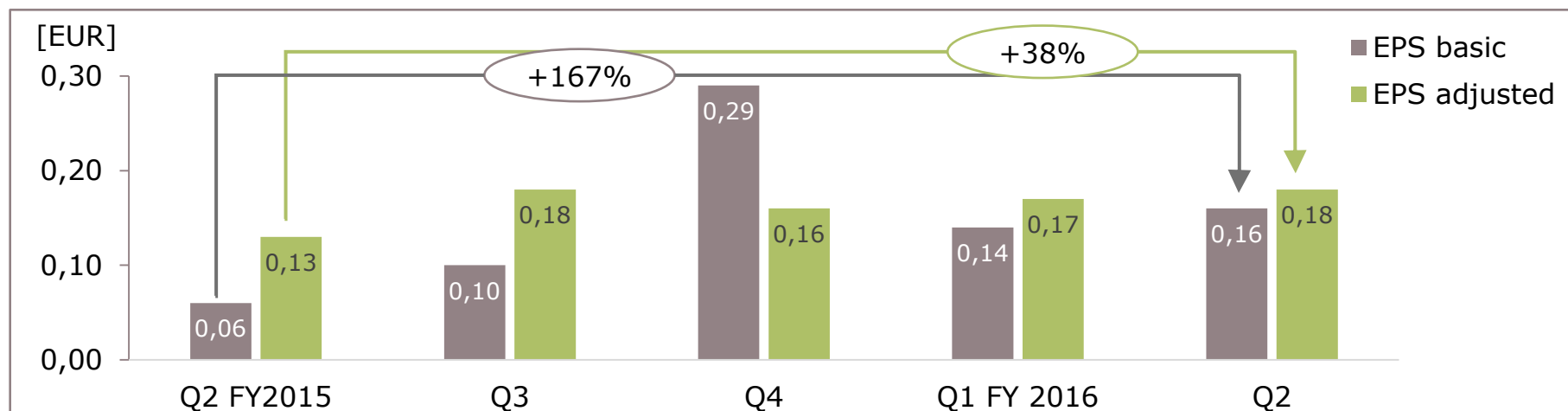
\* Based on Infineon's portfolio (excl. OOS and C&E) per end of 2015 fiscal year.  
 Source: Infineon; WSTS (World Semiconductor Trade Statistics), November 2015

# Our promise to investors: Continued value creation through growth (I)

## Q2 FY16 revenue yoy growth ~9%, despite shrinking market



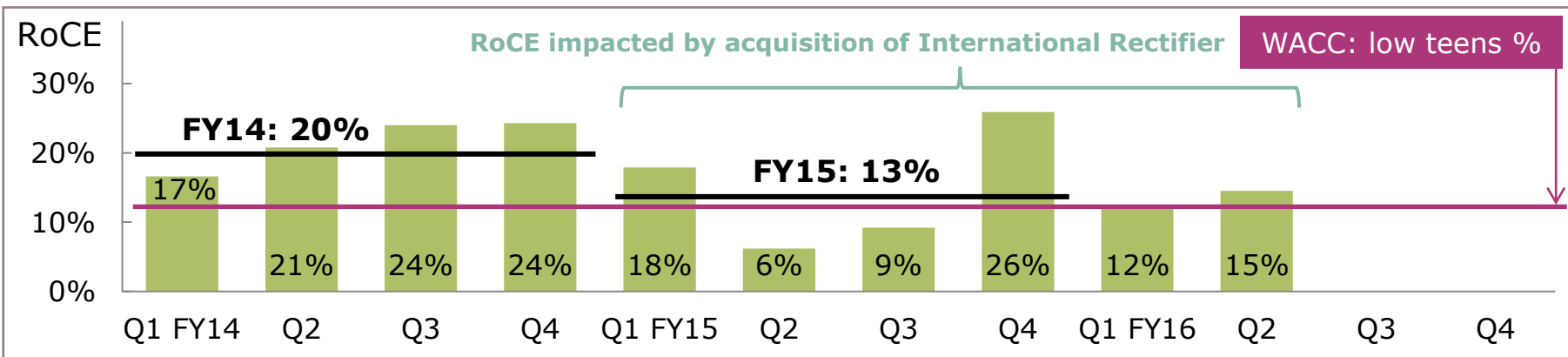
## EPS growth



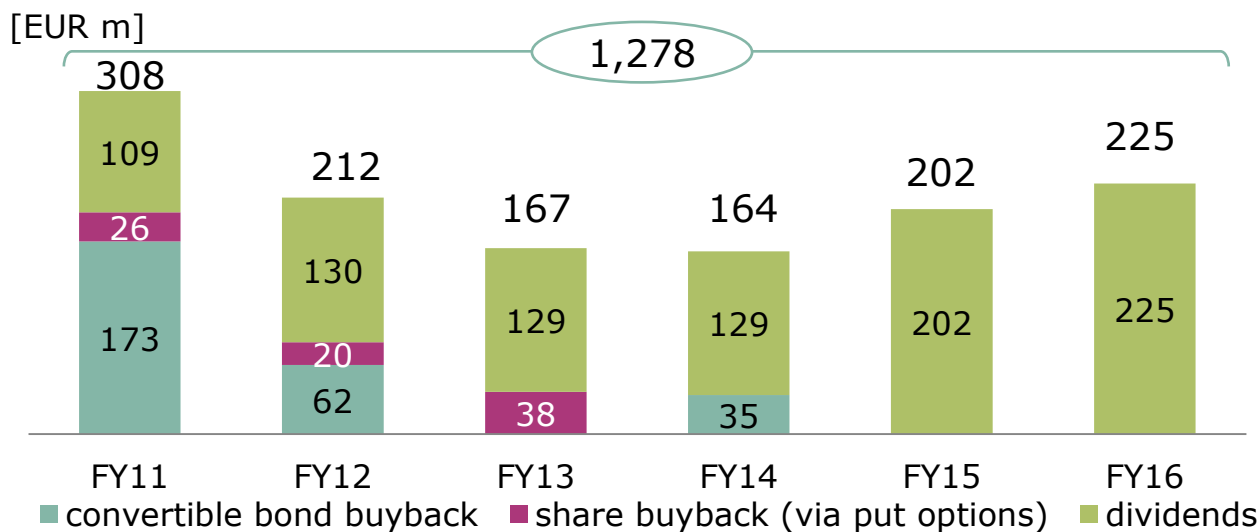
# Our promise to investors: Continued value creation through growth (II)



## RoCE as key value metric



## Total cash return to shareholders



- > Policy of sustainable dividend payout.
- > Increase of dividend from €0.18 to €0.20.
- > Payout of €225m on 19 Feb 2016.

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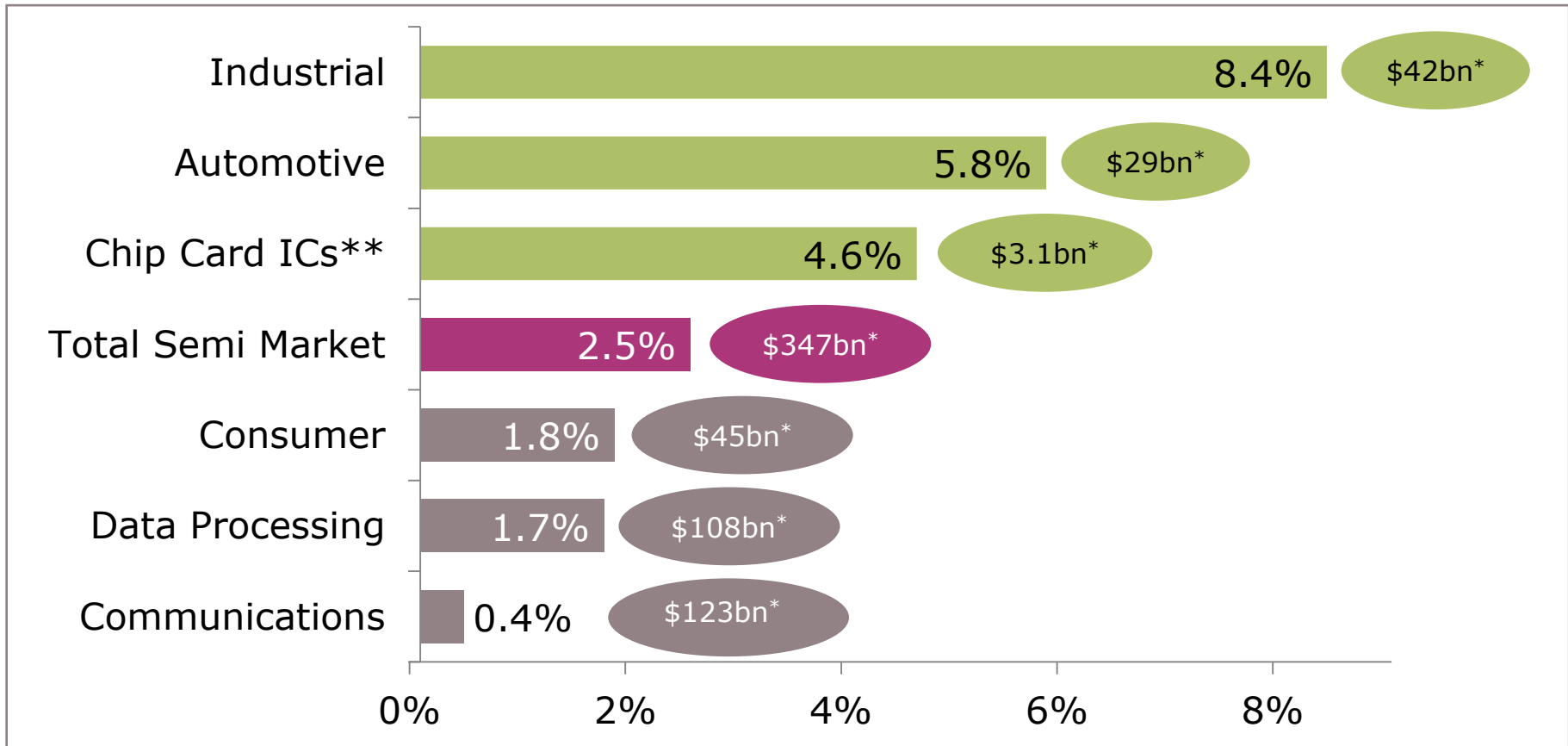
3 Summary



# Infineon focuses on fastest growing segments: industrial, automotive and security



## CAGR 2015 – 2020 by Semiconductor Industry Segment



Source: IHS Inc., Worldwide Semiconductor Shipment Forecast, April 2016

\* In calendar year 2015

\*\* CAGR 2015 – 2019; Source: IHS, "Smart Cards Semiconductors", August 2015

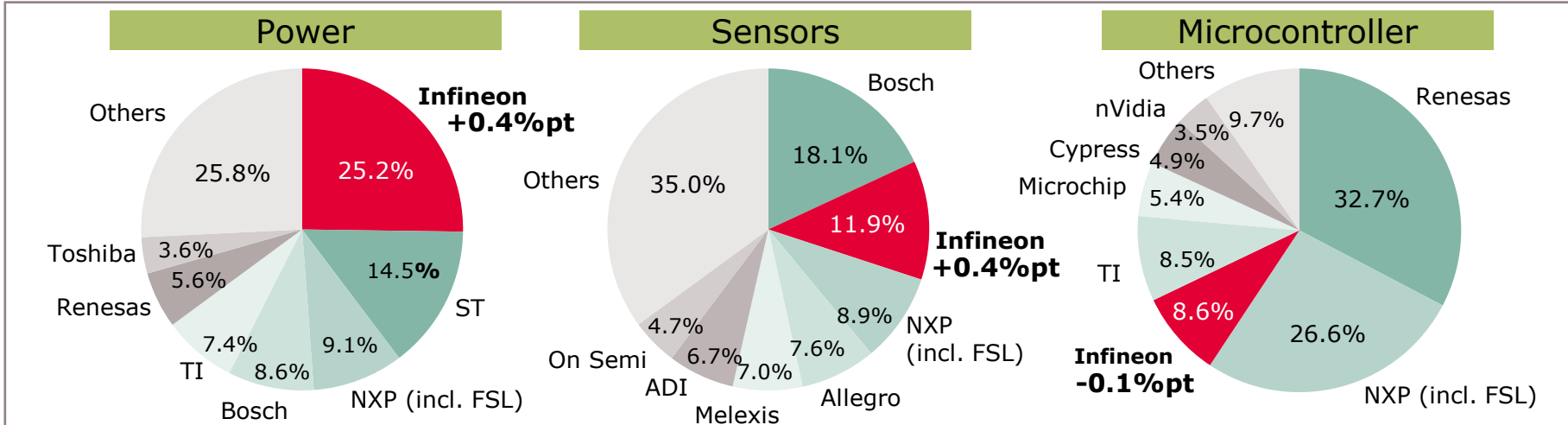
# System leadership with most balanced portfolio in the market



## Global market shares

	2014	Delta	2015
1 NXP (incl. FSL)	13.3%	+0.9%	14.2%
<b>2 Infineon</b>	<b>10.5%</b>	<b>-0.1%</b>	<b>10.4%</b>
3 Renesas	12.0%	-1.7%	10.3%
4 STMicro	7.8%	-0.1%	7.7%
5 TI	6.1%	+0.9%	7.0%
6 Bosch	6.2%	-0.8%	5.4%

## Market shares by product category



Source: Strategy Analytics, Vendor Ranking 2015 April 2016 (for company revenue 2015 & 2014)

# Megatrends ADAS/autonomous driving and xEV significantly driving semi content per car

## ADAS/Autonomous driving

- From ADAS to semi-automated and finally autonomous driving
- Every world region is striving for "0-accident"



## xEV/eMobility

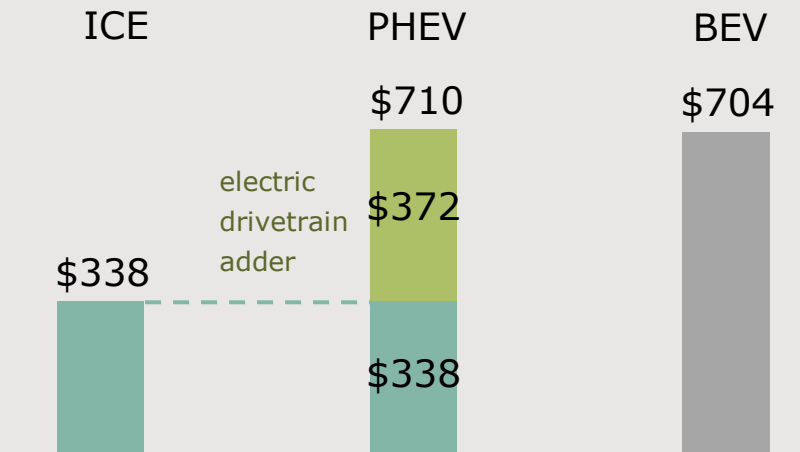
- Mandated CO<sub>2</sub> reductions make electrification of powertrain inevitable



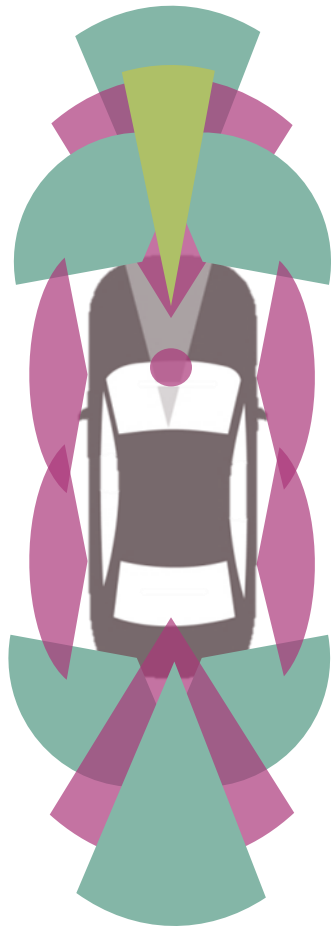
## Average add. ADAS semi content



## Average xEV semi content



# More sensors required for each automation level – sensor “cocoon” in level 4 and 5



■ Radar ■ Camera ■ Lidar

Sensor technologies	2015 Euro-NCAP*	2018 Euro-NCAP*	Level 2	Level 3	Level 4/5
Front looking camera	0.5	1	1	1	1
Front looking radar	0.5	1	1	1	1
Front looking lidar	–	–	–	–	1
Surround camera	–	–	–	–	4
Corner radar	–	2	2	4	4
Surround radar	–	–	–	–	6
Rear looking camera	–	–	–	1	1
Rear looking radar	–	–	–	–	1
Driver monitoring Camera	–	–	–	1	1
V2X Sensor	–	–	–	–	1
Parking Aid	Up to 10-12 ultrasonic sensors per car.				
Automated parking	Potential future replacement by RF CMOS radar.				

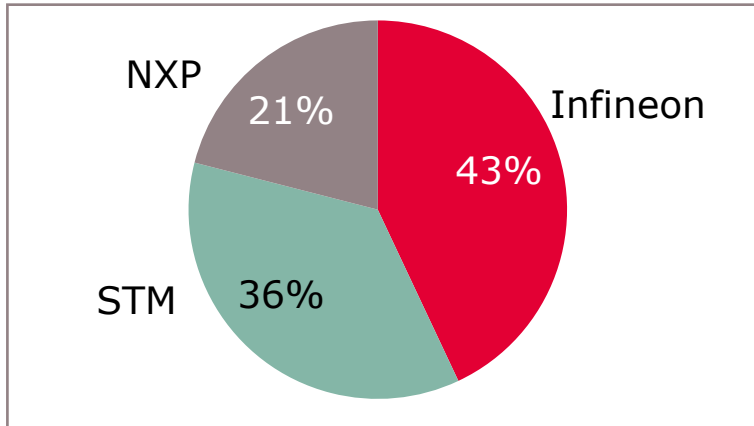
**Up to 12 SiGe radars per car (24/77 GHz)**

\* Euro-NCAP is focusing on collision avoidance, requirements are changing over time

Infineon is the market leader in radar,  
 > 15 million chips shipped already



2015 radar sensor market share\*



Vision Zero  
 + Autonomous Driving

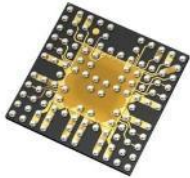
Innovations for driver, road and pedestrian safety

**"ATLAS" IC**  
 1<sup>st</sup> SiGe 77 GHz Transceiver



2009

**Mid-Range Radar**  
 1<sup>st</sup> 77 GHz product in eWLB package



**Dual-Chip Radar Solution**  
 1<sup>st</sup> complete System solution: 400 GHz RF,  $\mu$ C, power supply



Today

**Next Generation Dual-Chip Radar Solution**  
 600 GHz RF, AURIX™ 3<sup>rd</sup> Gen, power supply

**Single-Chip Radar Solution (CMOS)**

> 2022

\* Source: IHS Inc., "Advanced Driver Assistance Applications Sensor Market Database – H2 2015", February 2016

# Infineon with the most complete ADAS portfolio on the market

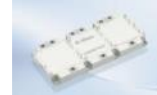


Infineon Portfolio		Sensor	Sensor Data Processing	Safe & Secure Processor	Safe Power Supply	Radar	Camera	Driver Monitoring	Sensor Fusion	Powertrain, Braking, Power Steering
portfolio / roadmap not addressed						 <small>Courtesy: Bosch</small>	 <small>Courtesy: Kostal</small>	 <small>Courtesy: Kostal</small>	 <small>Courtesy: Audi</small>	
CAMERA	Driver Monitoring					<ul style="list-style-type: none"> <li>&gt; Real3™ ToF camera – partnership with KOSTAL</li> <li>&gt; AURIX™ 32-bit μC for single function camera processing</li> <li>&gt; AURIX™ 32-bit μC for „safe &amp; secure hub“, full flexibility for OEM SW integration – up to ASIL D</li> </ul>				
	Front									
	Rear									
RADAR	77GHz					<ul style="list-style-type: none"> <li>&gt; market leader in radar with most complete product portfolio: 24 GHz (in prod.), 77 GHz (in prod.), RF CMOS (cooperation with IMEC on 79 GHz)</li> <li>&gt; &gt;15 million chips shipped already</li> <li>&gt; AURIX™ 32-bit μC</li> </ul>				
	24 GHz									
	RF CMOS									
LIDAR			tbd.			<ul style="list-style-type: none"> <li>&gt; AURIX™ 32-bit μC</li> </ul>				
SENSOR FUSION		n.a.				<ul style="list-style-type: none"> <li>&gt; AURIX™ 32-bit μC as ADAS reference for safety computing platform</li> </ul>				
ACTUATORS			n.a.			<ul style="list-style-type: none"> <li>&gt; market leader in powertrain and electric power steering</li> <li>&gt; up to 30% higher BOM content on fail safe/operational systems</li> </ul>				

# EV/HEV: Infineon is well positioned globally to benefit over-proportionally from xEV boom

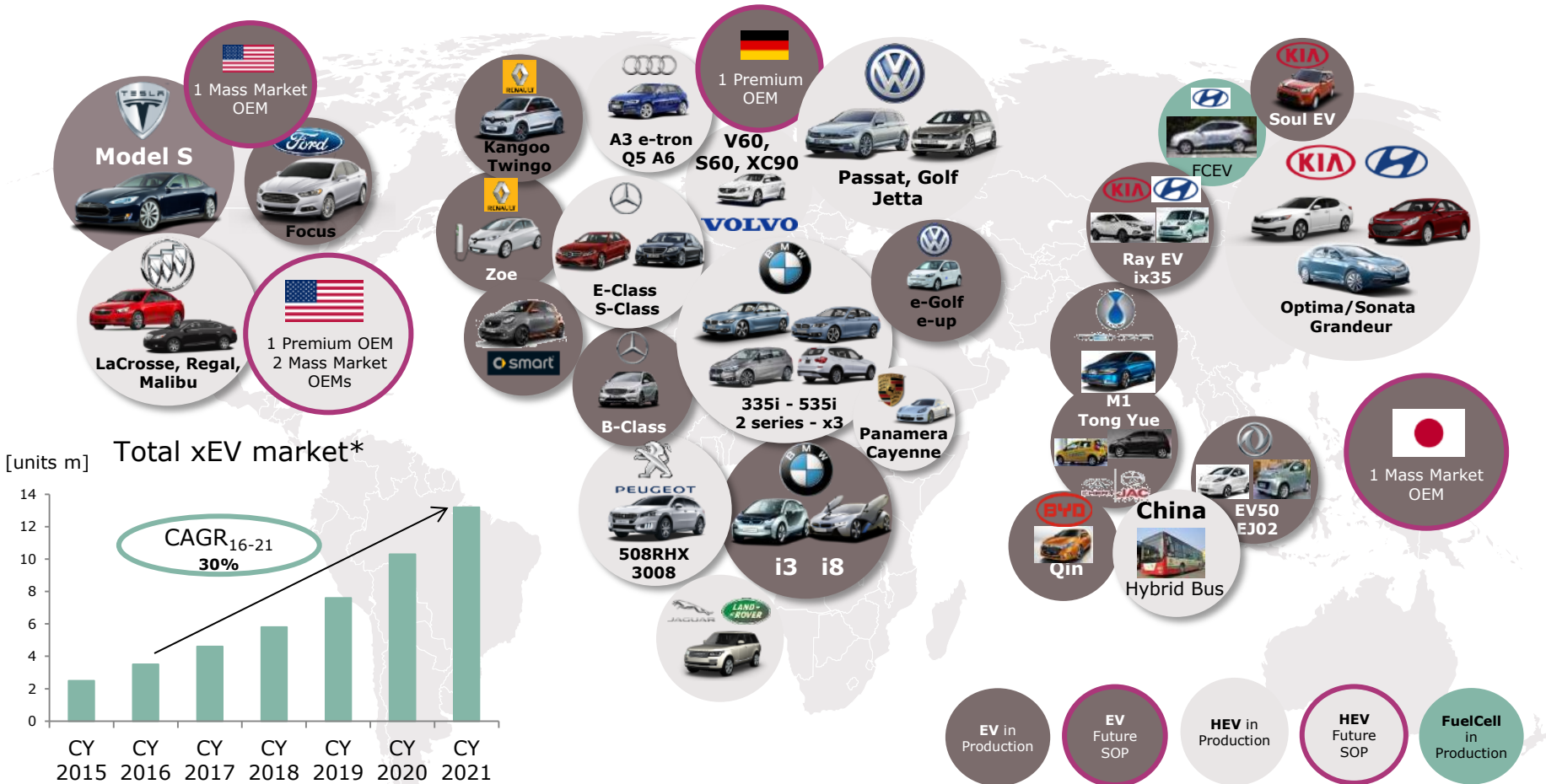


Drivers, bare die, IGBT, MOSFET, modules



Double Sided Cooling

**New!**  
25% higher inverter efficiency

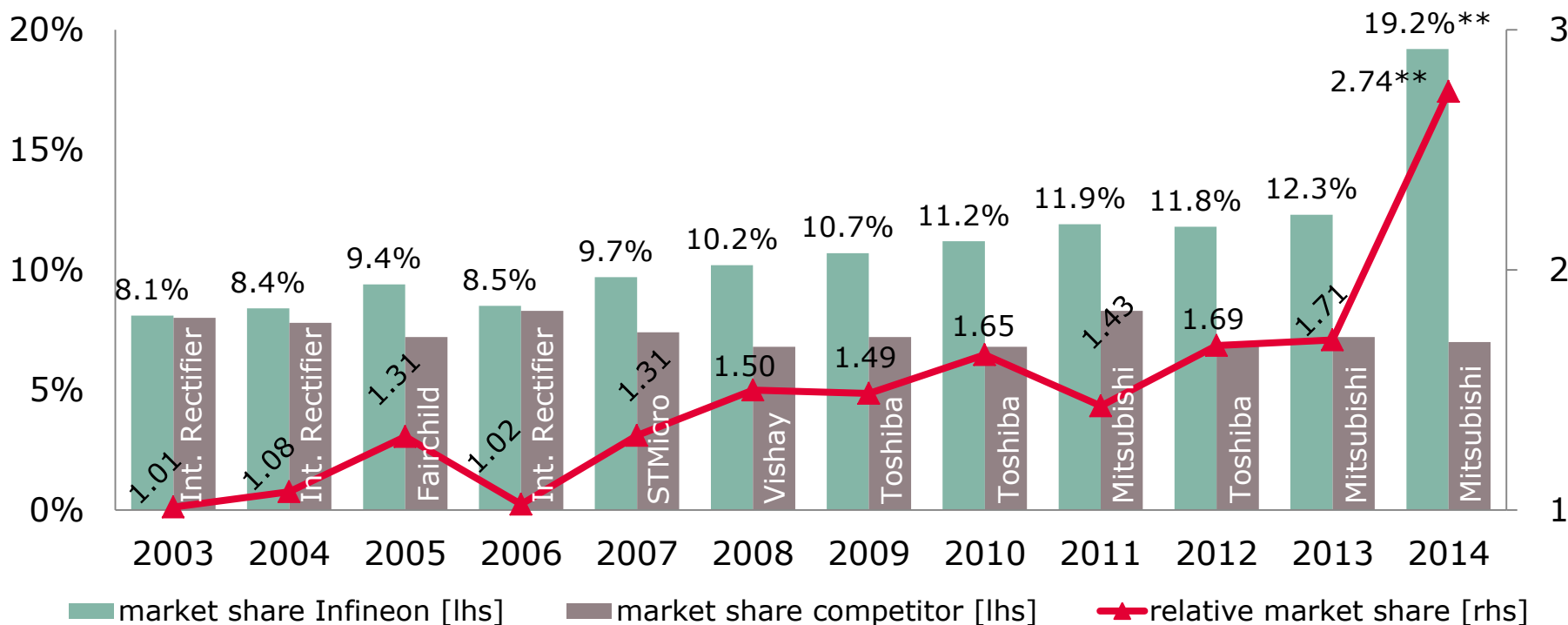


\*Source: IHS, „Alternative Propulsion Forecast“, Jan 2016 (includes BEV, PHEV, HEV, mild-hybrids)

# Infineon continuously strengthened #1 position in power semiconductors



## Development of Infineon's market share and relative market share\* in the total power semiconductor market



\* The relative market share is defined as the proportion of the market share held by the market leader (in all years presented for Infineon) compared to the market share of the second largest competitor in the relevant year.

\*\* Including International Rectifier.

Source: IHS Inc., several reports from 2004 through 2015



# Strong #1 position in power allows driving of key areas of differentiation & innovation



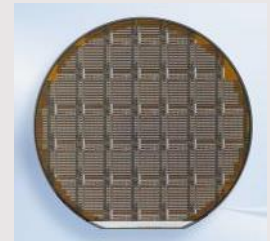
## Unique 300 mm thin wafer power semiconductor manufacturing

- › frontend production cost per unit 20-30% cheaper than on 200 mm
- › capital intensity is 30% lower than on 200 mm
- › 300 mm is planned to reach cost cross-over versus 200 mm by end of 2017



## Compound semiconductors GaN and SiC

- › compound semiconductors allow faster switching and reduced losses versus silicon leading to smaller footprint and lower system cost
- › #1 in SiC diodes since 2001
- › SiC MOSFET sampling soon
- › strongest IP portfolio and know-how in GaN



## Digitalization of the power control loop

- › digitalization of control loop of MOSFET-based AC-DC and DC-DC converters
- › complete offering of power IC, driver, MOSFET and optimized packages
- › appropriate solutions based on load and efficiency requirements:
  - AC-DC: charger, LED power supply
  - DC-DC: server, datacom, base stations, games consoles, graphics boards

## Functional integration of IGBT modules

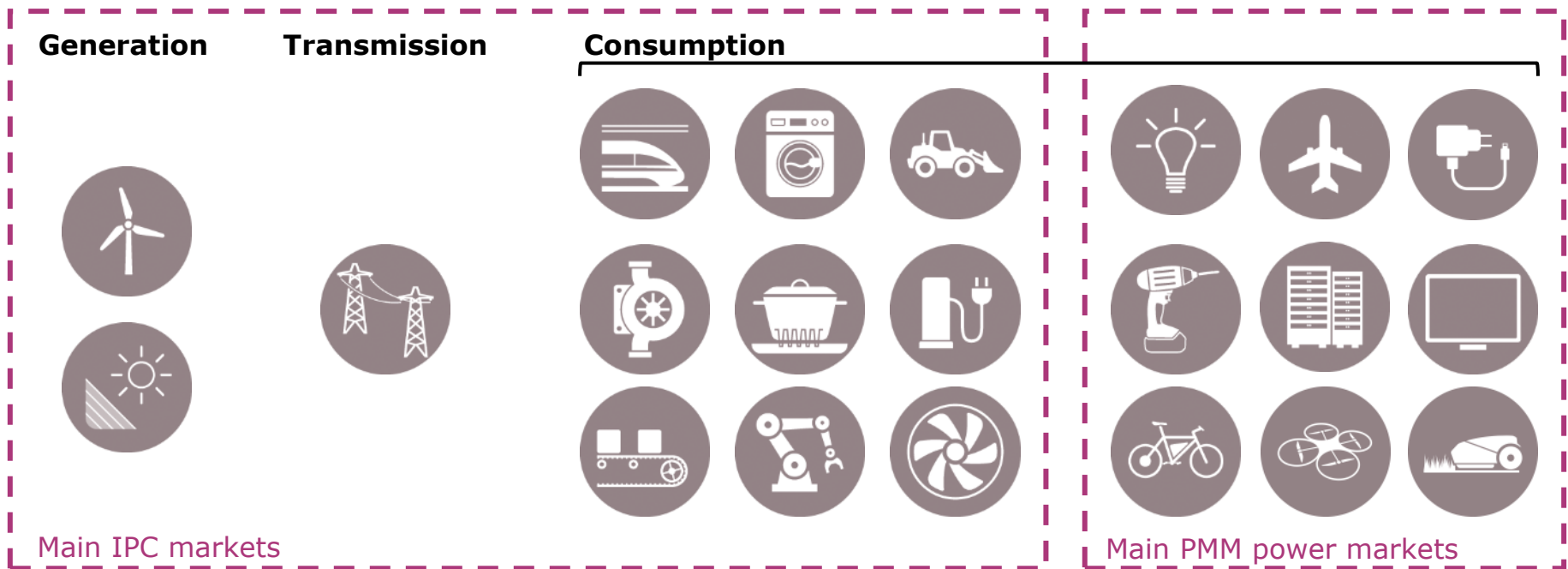
- › paradigm shift: integration of add. components in IGBT modules: sensors,  $\mu$ C, security ICs, I/Os
- › leads to new functionalities impossible with externally attached components: remote maintenance, early identification of failure, authentication of original parts
- › launch of new intelligent power module MIPAQ™ Pro at 2015 PCIM tradeshow



# As system leader in power, Infineon has broadest application and technology reach









## Covering the entire power chain



## System competence for highest reliability and highest efficiency

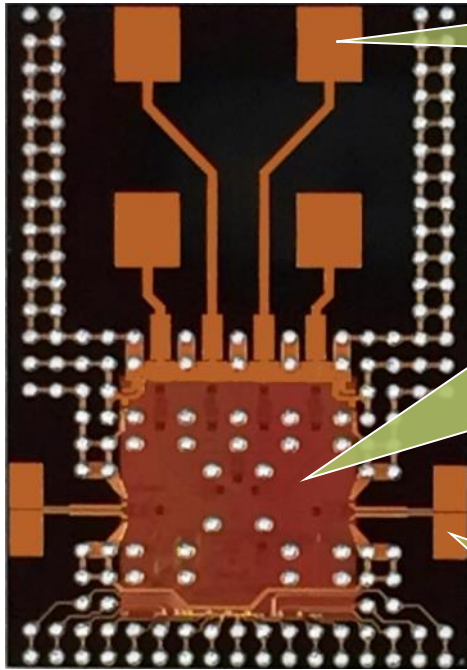


# Efficiency and digitalization are main market drivers for power applications

IPC				PMM	
Drives	Renewables	Traction	MHA	AC-DC	DC-DC
					
<ul style="list-style-type: none"> <li>› Energy efficiency</li> <li>› Automation</li> <li>› Productivity increase</li> </ul>	<ul style="list-style-type: none"> <li>› Legislation</li> <li>› Growing share of renewable energies as part of the energy generation mix</li> </ul>	<ul style="list-style-type: none"> <li>› Growing population in metropolitan areas</li> <li>› Fast and efficient mass transport system</li> </ul>	<ul style="list-style-type: none"> <li>› Energy efficiency</li> <li>› Growing VSD penetration</li> </ul>	<ul style="list-style-type: none"> <li>› Energy efficiency</li> <li>› Charging time</li> <li>› Compactness (power density)</li> <li>› Digital Power Management</li> </ul>	<ul style="list-style-type: none"> <li>› Energy efficiency</li> <li>› Compactness (power density)</li> <li>› Digital Power Management</li> <li>› Brushless DC motors</li> </ul>

MHA = Major Home Appliances  
VSD = Variable Speed Drive

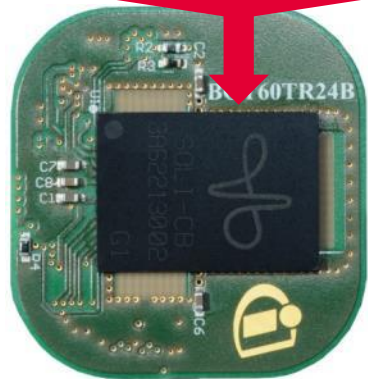
# Sensors drive multimarket segment in PMM: 60 GHz radar transceiver for gesture sensing



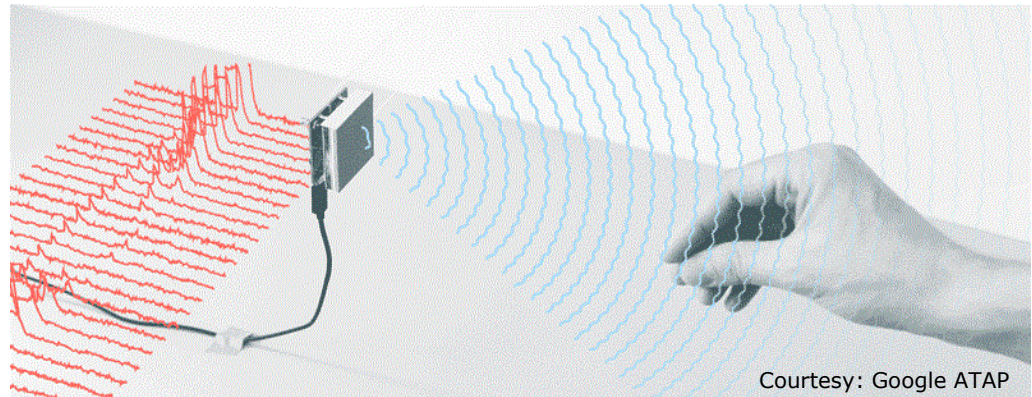
4 receive antennas

RF frontend, baseband, ADC, state machine, memory

2 transmit antennas



Presented at "Google I/O 2016"\*



Courtesy: Google ATAP

- > 1.8 V for the complete chip set
- > 54 mW power consumption in sensing mode
- > supports > 1,000 frames per second



Courtesy: Harman



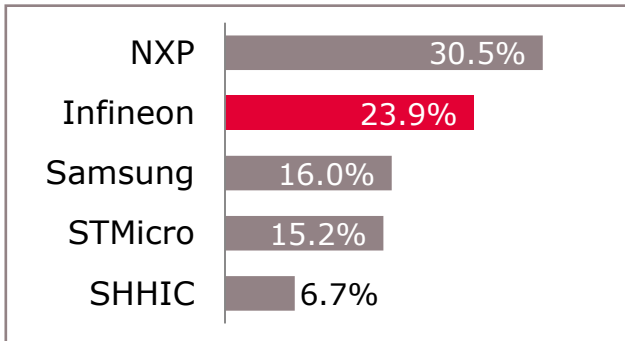
Courtesy: LG

\* See YouTube: <https://www.youtube.com/watch?v=8LO59eN9om4>

# CCS to grow faster than the market as leader in security solutions with broadest portfolio

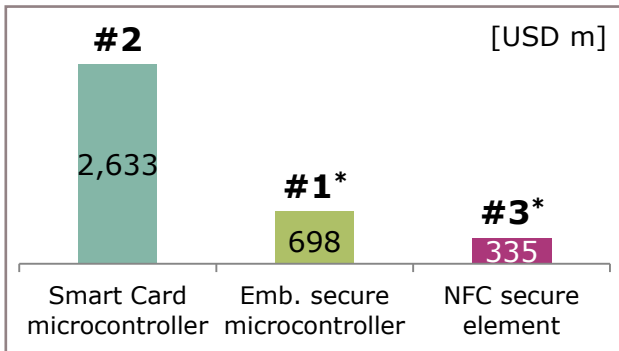


Smart Card ICs  
total market in 2014: \$2.63bn



Microcontroller-based smart card ICs.  
Source: IHS Inc., July 2015

Infineon holds leading positions in all relevant security markets



Source: IHS Inc., May, July, Dec 2015  
\* based on units; USD-ranking not provided

Payment



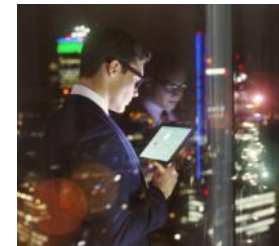
- › Transition to chip-based payment cards in China and the US led to revenue jump
- › Growth of mobile payment
- › Infineon is very well positioned in contact based payment cards in US

Government Identification



- › Adoption of electronic governmental documents (national ID cards, passports, health cards, etc.)
- › Emergence of multi-application cards
- › 150 successful ID projects, 75% of national eID projects in Europe

IoT Security



- › Rise of smart homes, connected cars, automated industries etc.
- › Increasing need for IT security
- › Growth of M2M communication
- › Authentication
- › CCS cooperates closely with other Infineon segments

High-end Mobile Communications



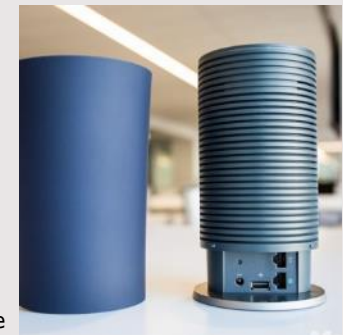
- › Greater adoption of NFC technologies for mobile payment and other applications
- › In addition to SIM cards Infineon offers secure elements embedded in phones and in Micro SD cards

# Most recent design-wins underline Infineon's #1 position\* in embedded digital security



## Most recent design-wins for OPTIGA™ family products

- › notebooks, e.g. Lenovo ThinkPad
- › USB memory cable
- › server
- › tablets, e.g. Microsoft Surface Pro 4
- › 3D glasses
- › IT management platform, e.g. Huawei
- › motorcycle controller
- › arcade gaming machines
- › smart home hub, e.g. Google OnHub



\* Infineon is market leader in embedded secure microcontrollers with 31% market share (ranking based on units).  
Source: IHS Inc., „Embedded Digital Security Report“, January 2016

# Infineon's long-term growth is based on sustainable growth drivers

## ATV



Courtesy: BMW Group

- > CO<sub>2</sub> reduction
- > Advanced Driver Assistance Systems

## IPC



- > Energy efficiency
- > Automation
- > Productivity increase

## PMM



- > Energy efficiency
- > Power density
- > BLDC motors
- > Mobile device and LTE growth

## CCS



- > Security as a function
- > Mobile payments
- > Authentication
- > Internet of Things

~8% p.a. through-cycle growth

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# Infineon's value proposition

- › Creation of shareholder value is a key target for Infineon (key metric: RoCE)
- › Infineon outgrew the market organically in the past 16 years
- › Infineon holds leading positions in all of its target markets
- › Technology leadership, system understanding and innovation continue to foster growth and profitability
- › Infineon is excellently positioned in the top growth applications of today: ADAS, electro-mobility, electric energy conversion, embedded security for IoT
- › Infineon is more than 2.5 times bigger than the next competitor in power semiconductors which allows for parallel investments in key initiatives
- › Infineon has a strong balance sheet and a balanced debt profile
- › Infineon holds investment grade rating „BBB“ (outlook: stable) by S&P since February 2016



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