

Power Management & Multimarket Conference Call

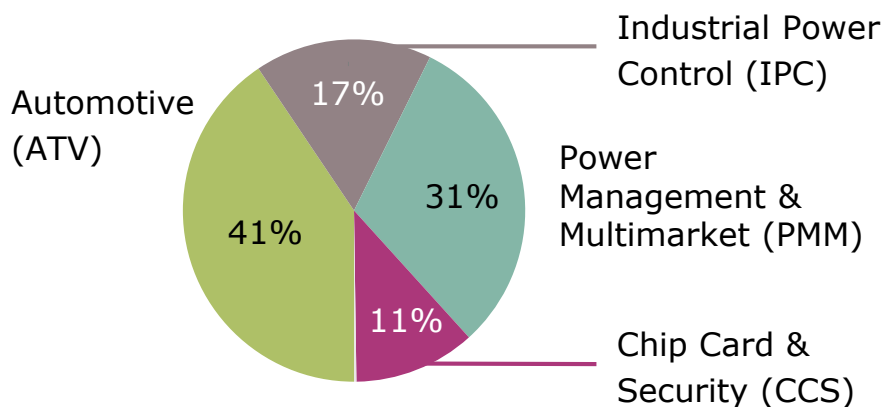
London, 29 June 2017



Andreas Urschitz
Division President PMM

Infineon at a glance

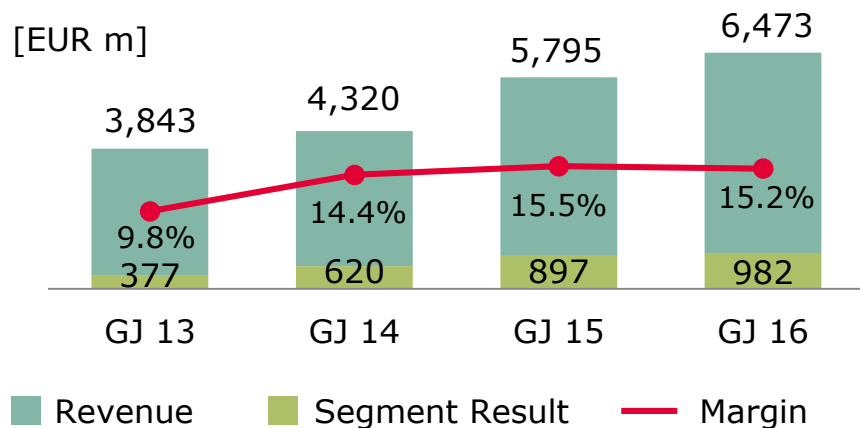
Business Segments



Revenue FY 2016

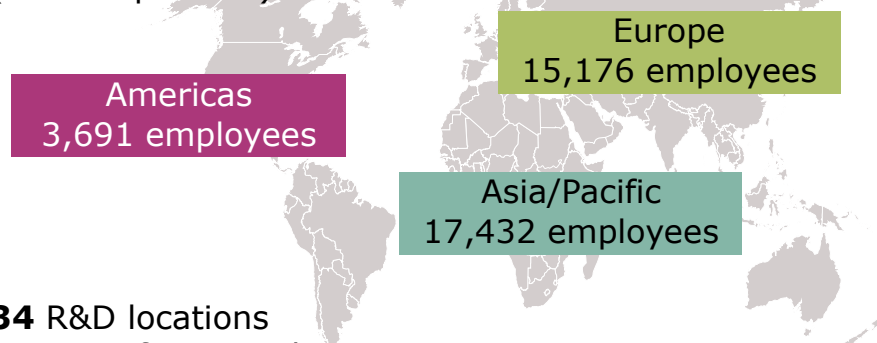
Financials

[EUR m]



Employees

More than **36,000** employees worldwide (as of Sep. 2016)



34 R&D locations
19 manufacturing locations

Market Position

Automotive



2

Strategy Analytics,
April 2016

Power



1

IHS Markit,
October 2016

Smart card ICs



2

IHS Markit,
July 2016

Our strategy is targeted at value creation through sustainable organic growth



Focus	Technology leadership		System understanding
Auto	Power	RF and sensors	Security
System leader in automotive	#1; system and technology leader	Broad RF and sensor technology portfolio	Leader in security solutions

Average-cycle financial targets

~8% p.a.
revenue growth

~17%
Segment Result Margin

~13%
investment-to-sales
(*thereof capex**: ~11%)

Continued value creation for shareholders

Organic RoCE ~ 2x WACC

- › paying out at least a constant dividend even in periods of slower growth
- › continuous EPS increase

* Infineon reports under IFRS and has therefore to capitalize development assets which represents currently ~2% of sales.

1 PMM at a glance

2 Power

3 Radio Frequency & Sensing

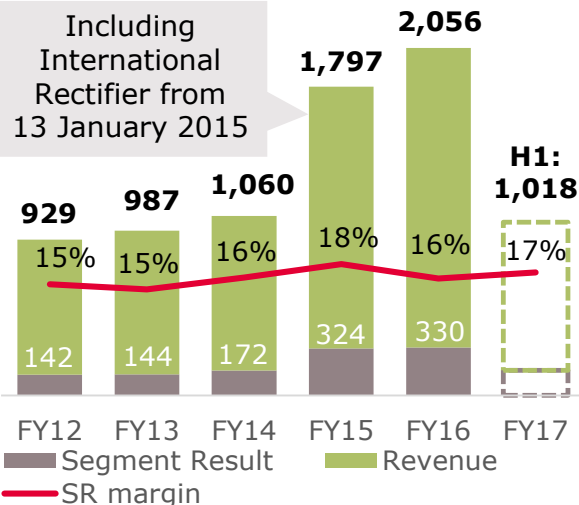
4 Summary

PMM at a glance: Representing ~30% of Infineon's revenue

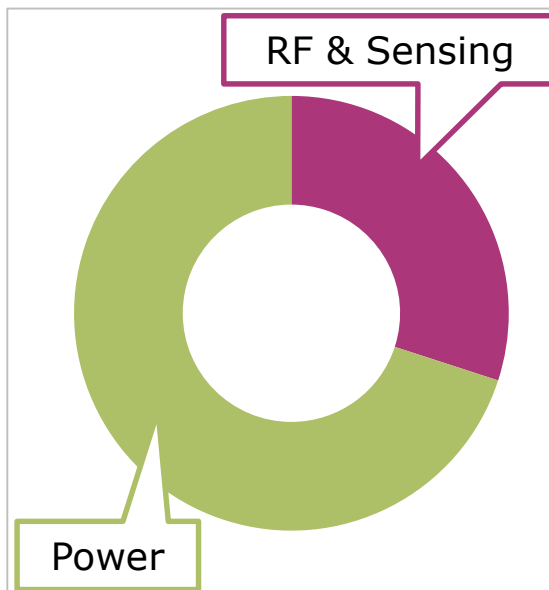
Revenue development

[EUR m]

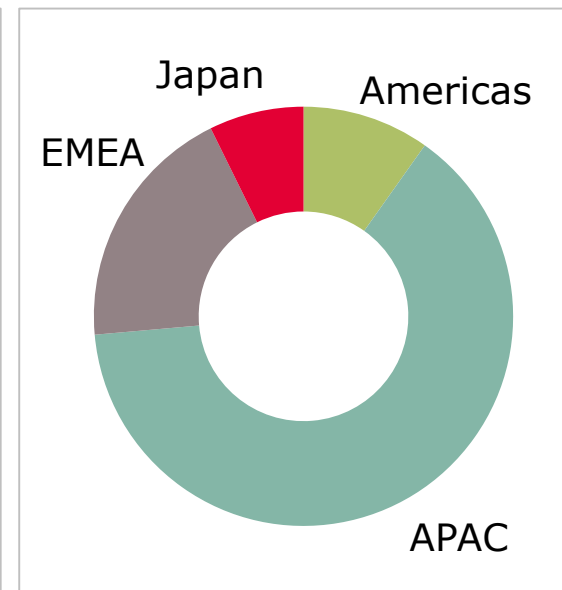
Including International Rectifier from 13 January 2015



Split by major segments



Split by regions



Key customers



Distribution partners



EMS partners



PMM business is driven by long-term trends

Digital transformation, electrification and rise of **battery-powered devices** drive demand for semiconductor solutions



Power

HiRel

RF & Sensing

Augmented Reality and **Internet of Things** drive demand for sensors and fast data transmission



Strong position allows for further growth with superior margins



Market leader with superior scale

- PMM holds the leading position in its main product segments
 - › #1 in the market for power MOSFETs (source: IHS Markit)
 - › #2 in the market for silicon microphones (source: IHS Markit)
- › Broadest product portfolio for broadest range of applications
- › IFX is the only manufacturer with volumes to operate economically a 300-millimeter power-discretes-only fab
- › Core technologies are leveraged into numerous applications to maximize Return on Investment

Technology leader

- › Industry-leading MOSFETs achieving the lowest $R_{DS(on)}$
- › Silicon microphone offers superior signal-to-noise ratio
- › Genuine RF specialist with industry-leading capabilities in LNAs, switches and millimeter wave
- › PMM is a leader in next-generation wide band gap power semiconductors (GaN)

1 PMM at a glance

2 Power

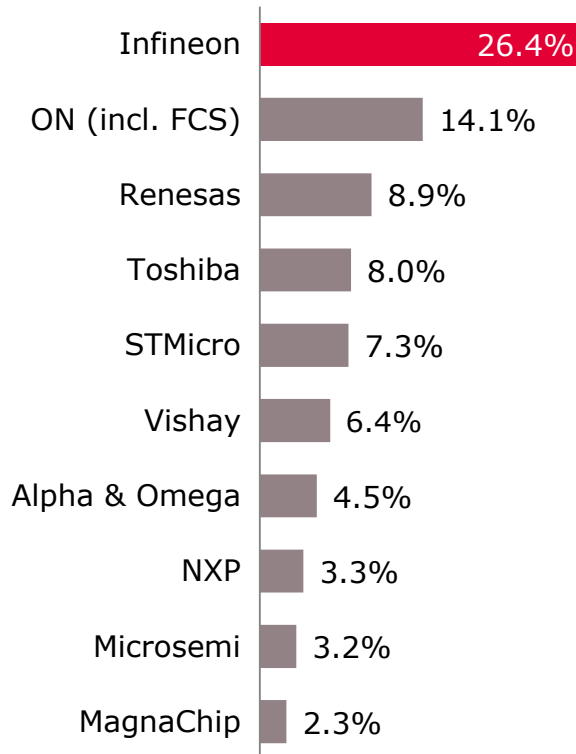
3 Radio Frequency & Sensing

4 Summary

PMM is the undisputed market leader in power MOSFETs

Discrete power MOSFETs

total market in 2016: \$5.78bn



Source: Based on or includes content supplied by IHS Markit, Technology Group, "Power Semiconductor Discretes & Modules Report", August 2017

Market and technology leader

- › Infineon runs the most profitable power discretes business in the industry
- › Infineon runs the only 300-millimeter fab for power semiconductors in the world
- › PMM offers the broadest portfolio of low- and medium-voltage-MOSFETs (OptiMOS™) and high-voltage-MOSFETs (CoolMOS™) with outstanding efficiency



25V OptiMOS™ 5



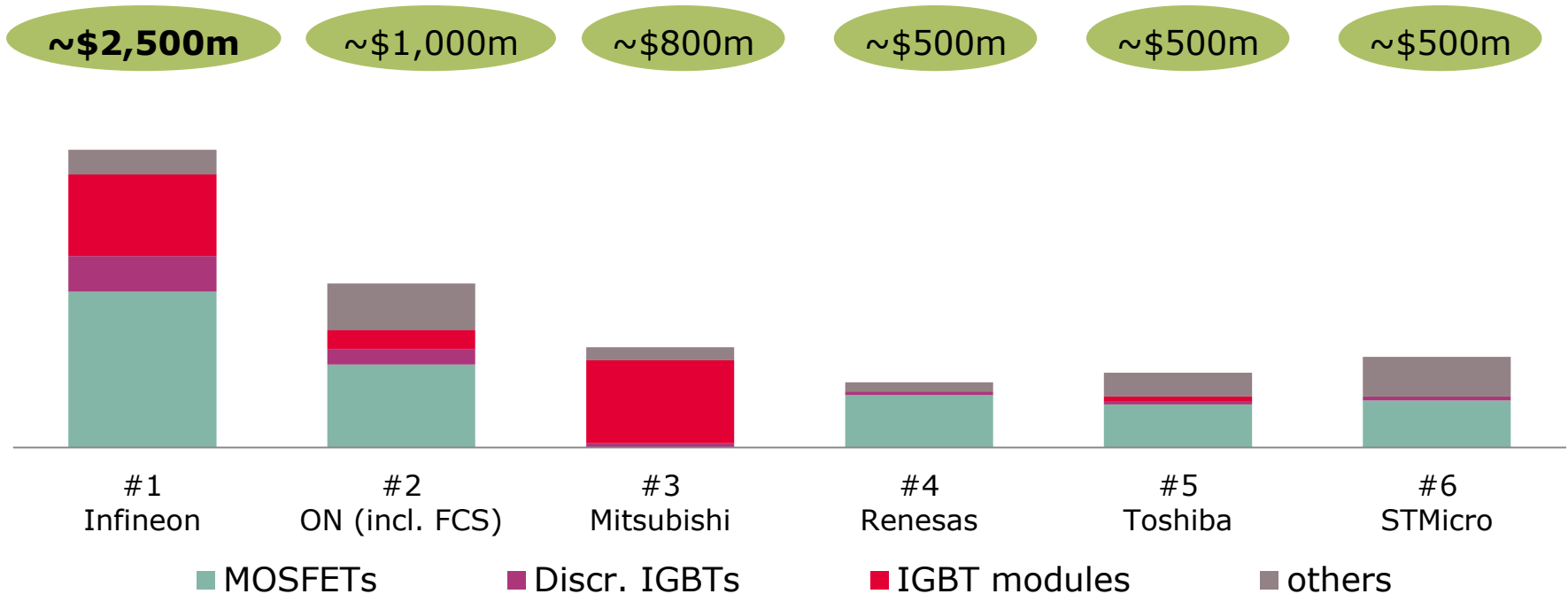
800V CoolMOS™ P7

low ← voltage → high

Scale advantage: Infineon is best positioned to fill a 300 mm fab for power semiconductors



2015 total market for "300 mm feasible products"
(MOSFETs + discrete IGBTs + IGBTs modules): ~\$9.5bn



Only Infineon has the manufacturing landscape to fully seize the growth opportunities in the power semiconductor market.

Source: IHS Markit, "The World Market for Power Semiconductor 2016 Edition", October 2016

Broadest portfolio of MOSFETs covering all applications in AC-DC and DC-DC conversion

Target applications

AC-DC conversion

- › Lighting
- › Low- and medium-power SMPS
- › High power SMPS



DC-DC conversion

- › Enterprise power
- › Power management
- › BLDC motors

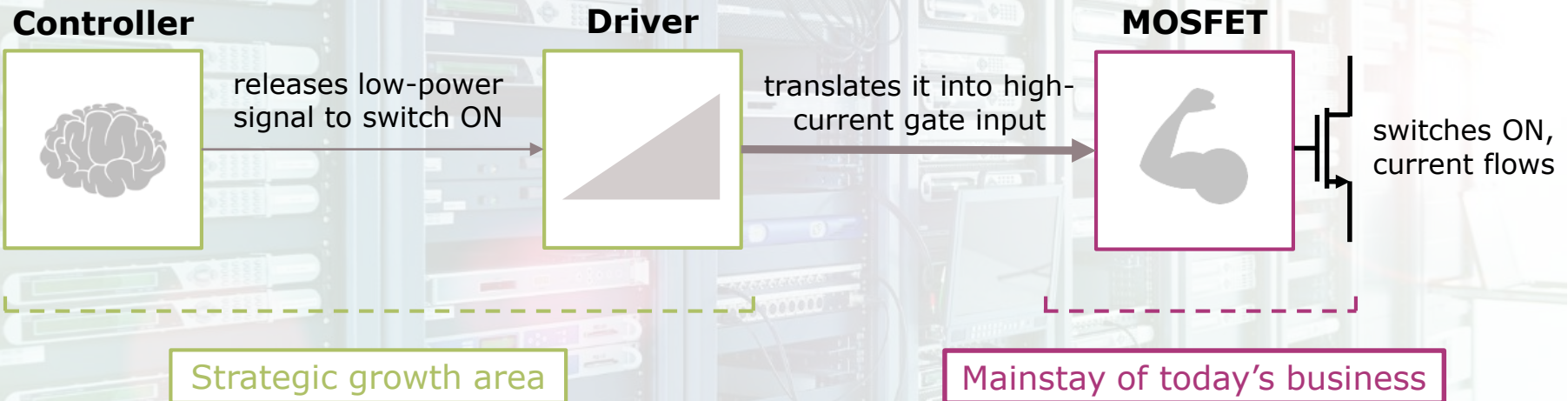


Market requirements

- › Infineon's portfolio comprises products with **optimized price/performance ratio** as well as leading-edge solutions for highest **energy efficiency** and/or **power density**

Product-to-System approach opens growth opportunities beyond MOSFETs

Essential parts of any electronic system (e.g. in an SMPS); can be realized with separate components or as an integrated power stage as system-on-chip



Driving system approach creates opportunities for further growth

- › Expansion of IC product portfolio increases addressable market
- › TAM in 2021*: €7.0bn

- › MOSFETs account for ~80% of today's PMM power business
- › TAM in 2021*: €6.3bn

* Infineon estimates

Portfolio of power management ICs will be extended step by step

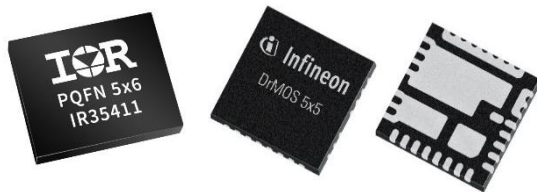
Today



**DC-DC voltage regulation
for servers**



Digital LED driver IC



Tomorrow



**Chipsets for battery-
powered applications**



Chipsets for telecom



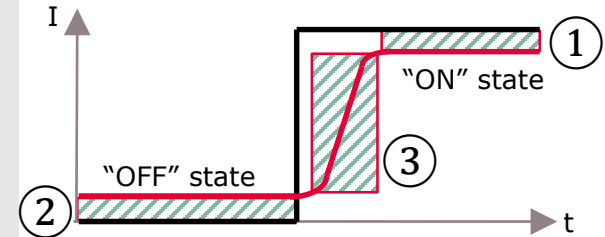
**Chipsets for wireless
charging**

Power semi players are continuously striving for higher energy efficiency and power density

Main challenges in power semiconductor development

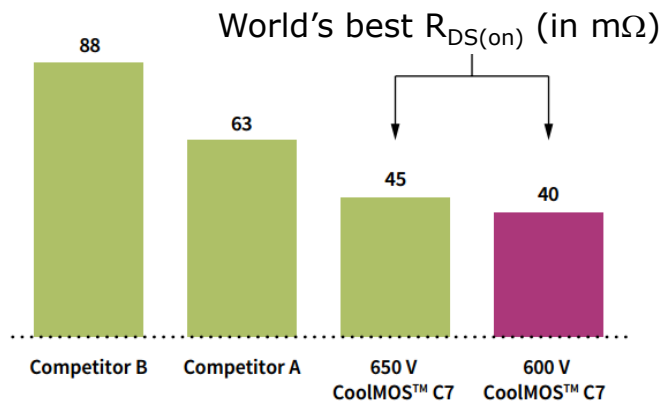
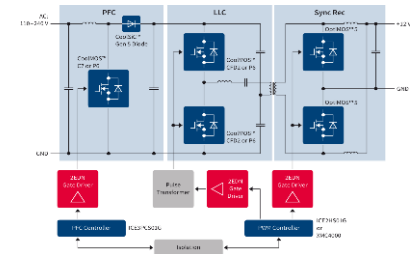
Device

- › Lowest resistance in ON state ($0\ \Omega$) ①
- › Highest resistance in OFF state ($\infty\ \Omega$) ②
- › Fastest switching time OFF $\Rightarrow$ ON and ON $\Rightarrow$ OFF ③
- › Lowest switching losses



System

- › Optimized interaction of switch and ICs to increase efficiency
- › Integration of devices to reduce system size
- › In the future, use of highly efficient GaN solutions



- › Infineon's power MOSFETs (OptiMOS™, CoolMOS™) offer leading ON state resistance ($R_{DS(on)}$)
- › Comprehensive portfolio of power management ICs allows for further performance boost (e.g. XDP™)
- › Integrated solutions perfectly meet the needs of system designers (e.g. CoolSET™)

Example: Power savings in data centers enabled by power semis of highest efficiency



Average number of requests processed per second



60,837 search requests



2,597,544 e-mails



7,647 tweets



69,614 video views



2,627 calls



786 pictures

Data traffic will continue to soar due to digital transformation and rise of artificial intelligence; slightest increase in efficiency has a tremendous impact

TCO reductions on company level



- › Data center professionals consider power usage effectiveness (PUE) and opex to be the most important metrics*
- › Higher efficiency of a data center translates into multi-million \$ savings p.a.

CO₂ reduction on a global level



- › Data centers account for ~3% of the global electricity consumption
- › In the current decade, improvements in energy efficiency enable savings of 620bn kWh in US data centers alone**

* Uptime Institute Data Center Industry Survey 2015; ** US Department of Energy

Example: PMM provides best-in-class power MOSFETs for Chinese charging infrastructure



CoolMOS™ P6/C7

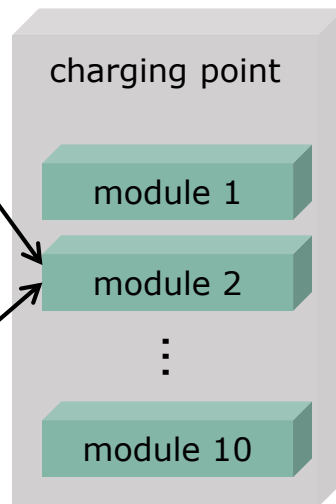


PFC

CoolMOS™ CFD2



PWM



PFC = Power Factor Correction
PWM = Pulse Width Modulation

- › China to build nationwide charging station network to charge 5m electric vehicles expected by 2020:
 - › > 12,000 main charging stations*
 - › > 4.5m charging points in total*

- › 10 kW .. 15 kW per module
- › 7 .. 10 modules

⇒ in total ~100 kW per charging point with > 100 power MOSFETs

total power semiconductor content per charging point: \$200 .. \$300

* According to the „Electric Vehicle Charging Infrastructure Guidelines“, August 2015.

Portfolio of Gan-on-Si devices for 600V meets highest efficiency and density requirements



Value of GaN by application - examples



Hyperscale data centers move towards more power/server

GaN allows for **increased efficiency** and **lower system cost**

600V CoolGaN™



First set of products available with Infineon quality

System know-how a key differentiating factor since GaN requires changes to entire system design



SMPS with ever higher power density

GaN enables **higher power density** by handling **higher frequencies**

Strengthening IC business allows for faster growth in power than market average



Average through-cycle growth of power business: 8% p.a.

2-3%-pt
p.a.

from power ICs



+

5-6%-pt
p.a.

from MOSFETs



Expand product portfolio

Bundle with MOSFETs

Tailor go-to-market strategy

Leverage system knowhow

Maintain technology leadership

Capitalize on scale advantage

Further extend market leadership

1

PMM at a glance

2

Power

3

Radio Frequency & Sensing

4

Summary

RF and sensing devices enable new services and will shape the way we live and work

Courtesy: BMW

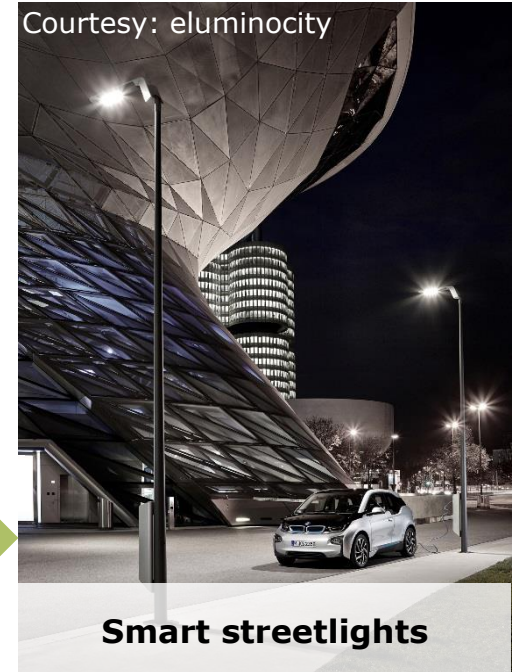


Augmented Reality



Voice-controlled devices

Courtesy: eluminocity

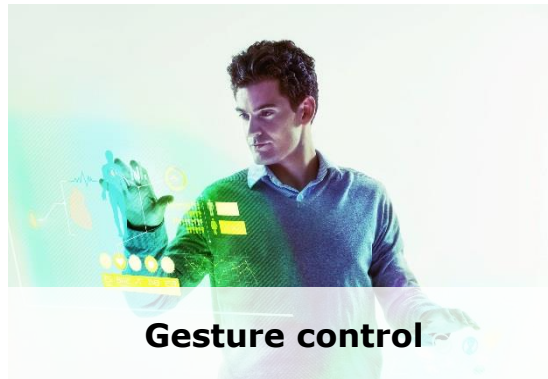


Smart streetlights

Various use cases are enabled by a small set of powerful core technologies



Commercial and consumer multicopters



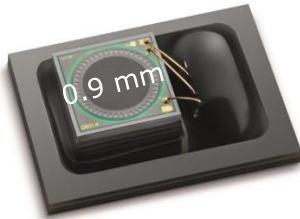
Gesture control



Industrial robotics

PMM is a leader in core technologies for ambient sensing, thus driving innovation

MEMS



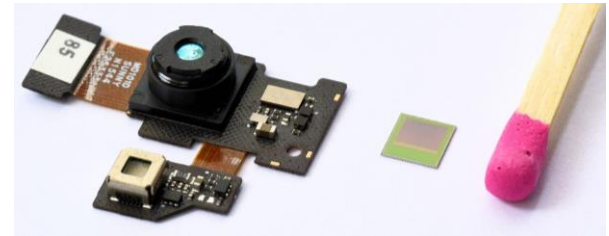
- › #2 in the market (31.1%) for silicon microphones
- › World's best signal-to-noise ratio
- › Integration of additional sensing functions

Radar



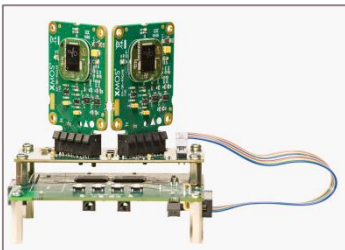
- › 60 GHz radar sensors e.g. for gesture sensing (example: Google Soli)
- › 24 GHz radar sensors e.g. for automotive, robotics and smart home

Time of Flight



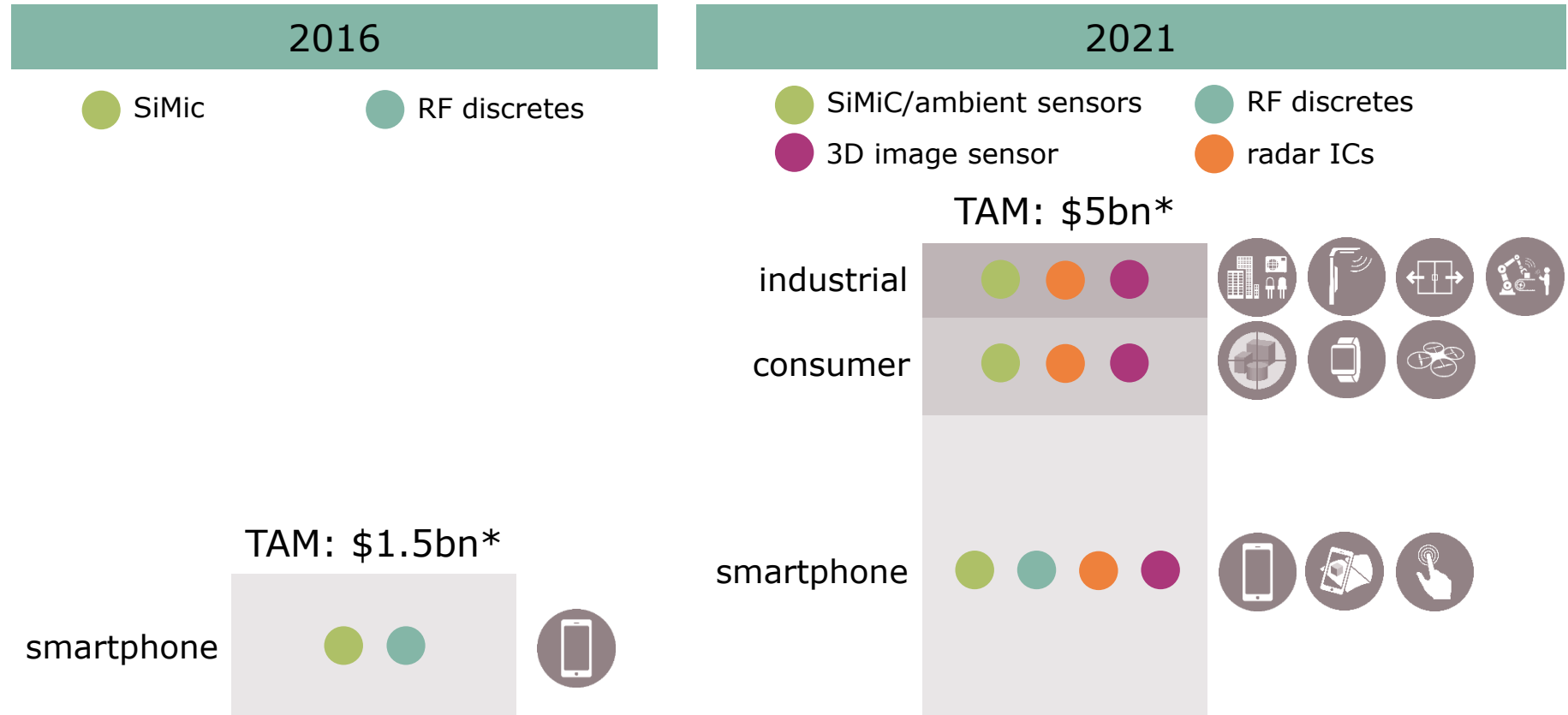
- › REAL3™ image sensor for AR/VR applications in smartphones and automotive driver monitoring
- › High-resolution 3D image sensor available with 19k, 38k and 100k pixels, measuring brightness and distance for every single pixel
- › Meeting the requirements of Google's Tango platform

Sensor fusion



- › Combination of microphone and radar with audio processor from XMOS enables far field voice capture by audio beamforming combined with radar target presence detection.

Growth in RF & Sensing is driven by broader product portfolio and emerging applications



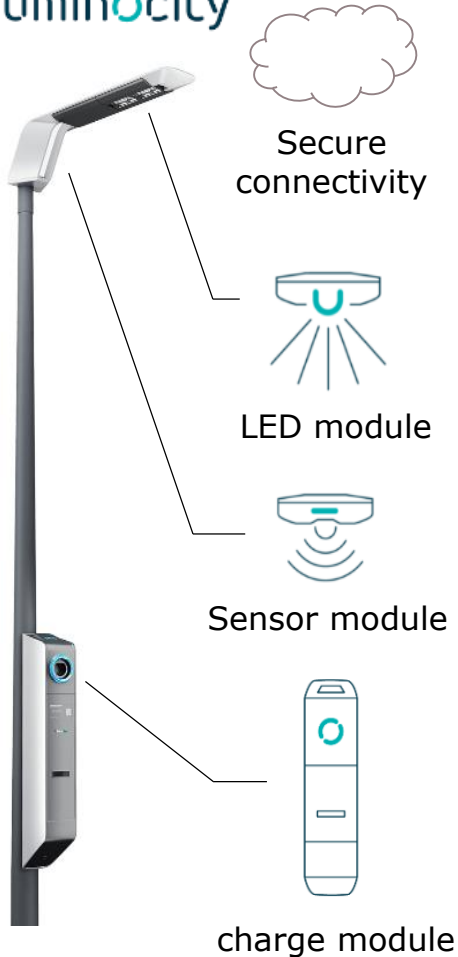
* Infineon estimates

- › **SiMic:** Integrating additional ambient sensors in up-coming generations (e.g. temperature and pressure)
- › **RF discretes:** Adding a focus on antenna-centric solutions to existing LNA and switch business

Product-to-System (I): combining RF, sensing and power for smart street lighting

Truly smart infrastructure solution enabled by system knowhow

eluminocity



Secure encryption and authentication

Lower operating cost and light pollution

Variety of use cases for smart cities (e.g. light control, parking)

Densification of EV charging infrastructure



Courtesy: eluminocity

Product-to-System (II): combining RF, sensing, power and security for multicopters

From toys



Advanced semiconductor technology pushes performance of multicopters to meet the needs of industrial applications (e.g. delivery, precision farming)

to tools



A multicopter may feature up to 53 Infineon parts from all four divisions

Development effort and cost

ready-to-use solutions like iMotion™ motor control IC reduce time to market

Safety, security and authentication

collision avoidance with 24 GHz radar, authentication of components with OPTIGA™

Accuracy and easy control

multi-function sensors ensure stable cruising and accurate control of the multicopter

Lighter

highly efficient components and effective flight control reduce weight and allow for longer flights

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4 Summary

Tailored growth strategies help maintain leadership position in both major segments

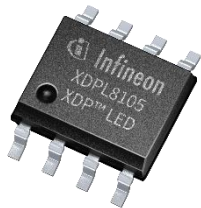
Power

Current position



- › Scale and technology leader in power MOSFETs
- › Broadest portfolio: 25V – 900V
- › Addressing all applications
- › #1 holding ~1/3 of the market

Growth levers



- › Capitalize on scale and technology leadership in discretes
- › Double TAM by pushing into power management ICs

Growth of ~8% p.a.

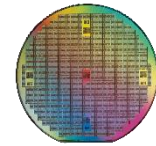
RF & Sensing

Growth based on 3-layer-model

MEMS



Compound semis



SiMic

Ambient
Sensors

Radar
ICs

RF
discretes

RF PA



Higher added value with system understanding

- › Core **technologies** enable broad portfolio of **products** for even more **applications**.

Growth of ~8% p.a.

Key takeaways

- › PMM comprises of two major pillars – Power and RF & Sensing – both growing with a through-cycle average of 8% p.a.
- › As undisputed leader in MOSFETs, PMM will grow faster than the market through scale- and technology-leadership and expansion of IC portfolio
- › 300-millimeter power-discretes fab in Dresden will help reap scale advantage in power
- › PMM expands cutting-edge sensor portfolio and will address more applications in industrial and consumer
- › As genuine RF specialist, PMM will benefit from expanding the portfolio and content growth in mobile handsets



Part of your life. Part of tomorrow.



Glossary

- › AR: Augmented Reality
- › BLDC: brushless DC motor
- › GaN: gallium nitride
- › HiRel: High-Reliability
- › IC: integrated circuit
- › LNA: low noise amplifier
- › MOSFET: metal-oxide-semiconductor field-effect transistor
- › PA: power amplifier
- › RF: radio frequency
- › $R_{DS(on)}$: resistance between drain and source in on-state
- › SiC: silicon carbide
- › SiMic: silicon microphone
- › SMPS: switched-mode power supply
- › TCO: total cost of ownership
- › VR: Virtual Reality