

Third Quarter FY 2020 Quarterly Update

Infineon Technologies AG
Investor Relations



Agenda

1 First quarter Cypress being part of Infineon

2 ESG: targets and achievements

3 Automotive

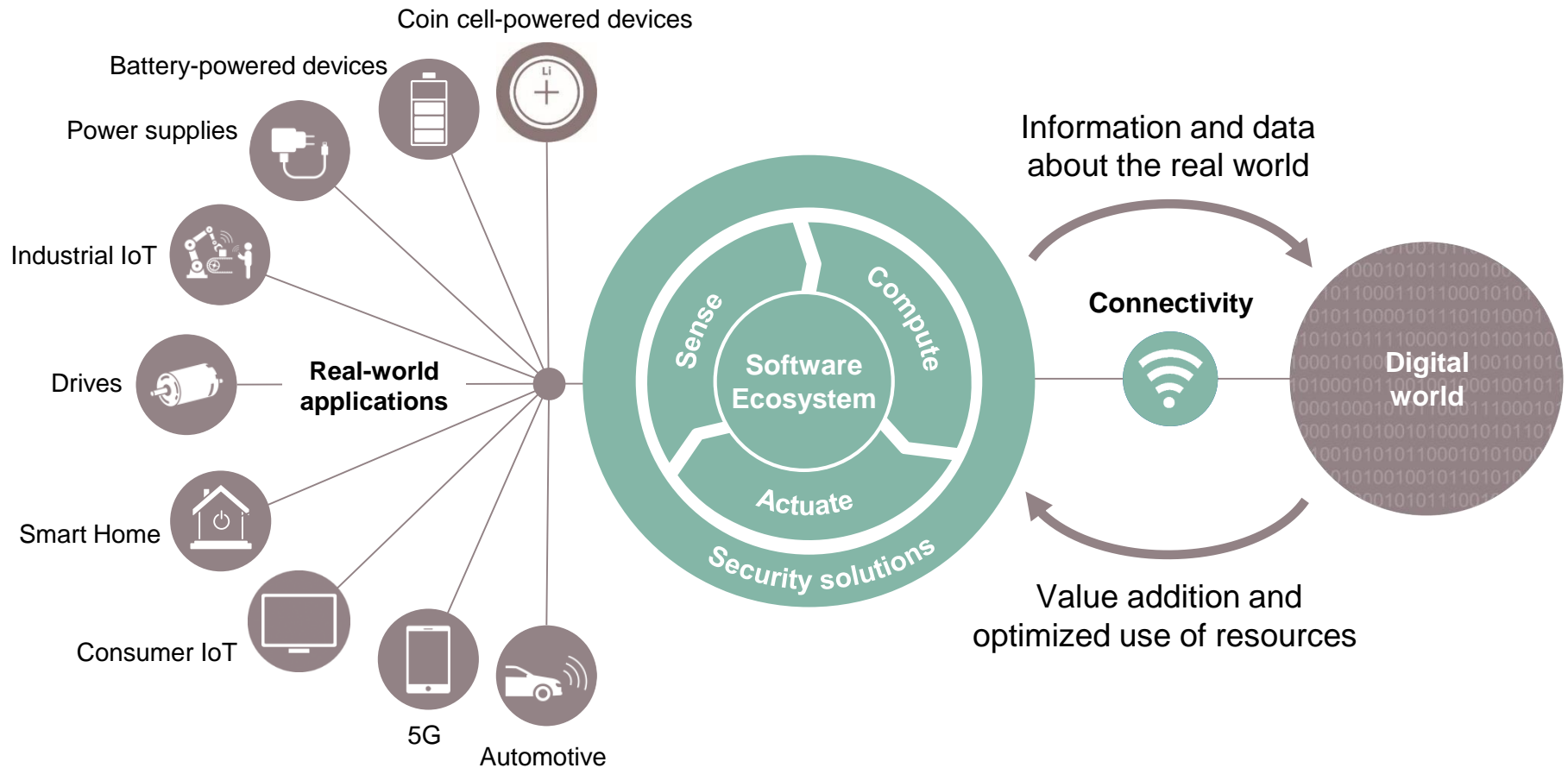
4 Industrial Power Control

5 Power & Sensor Systems

6 Connected Secure Systems

7 Selected financial figures

Infineon offers a unique portfolio that links the real and the digital world



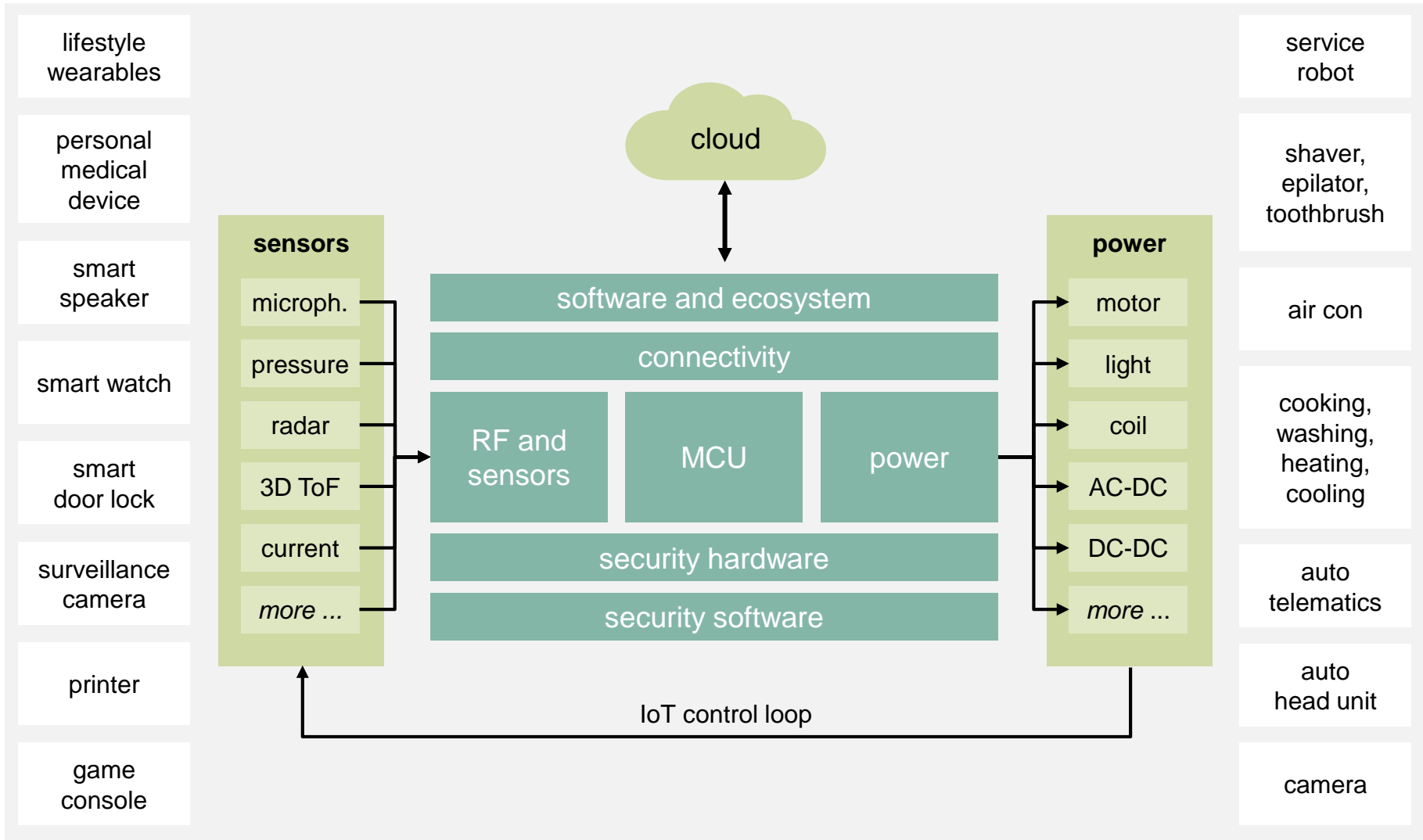
Sense: sensors

Compute: microcontrollers, memories

Actuate: power semiconductors

Connectivity: Wi-Fi, Bluetooth, USB

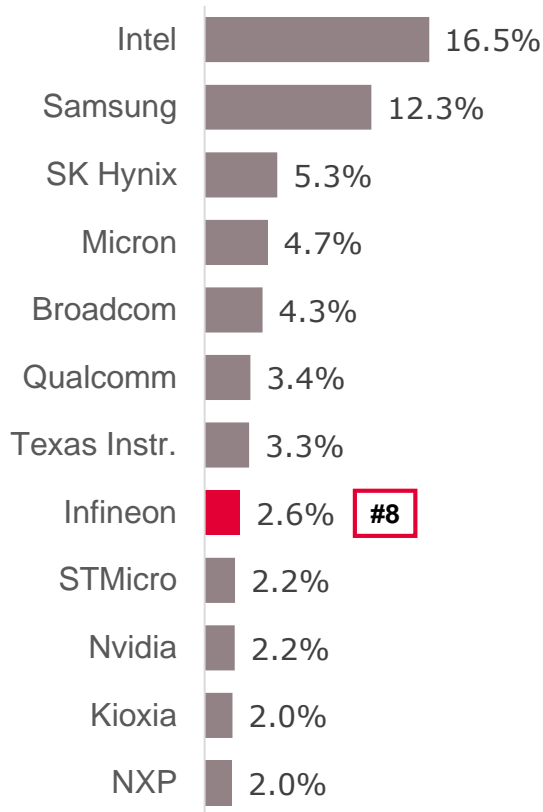
Infineon now offers the entire system for IoT - unlocking new markets and applications



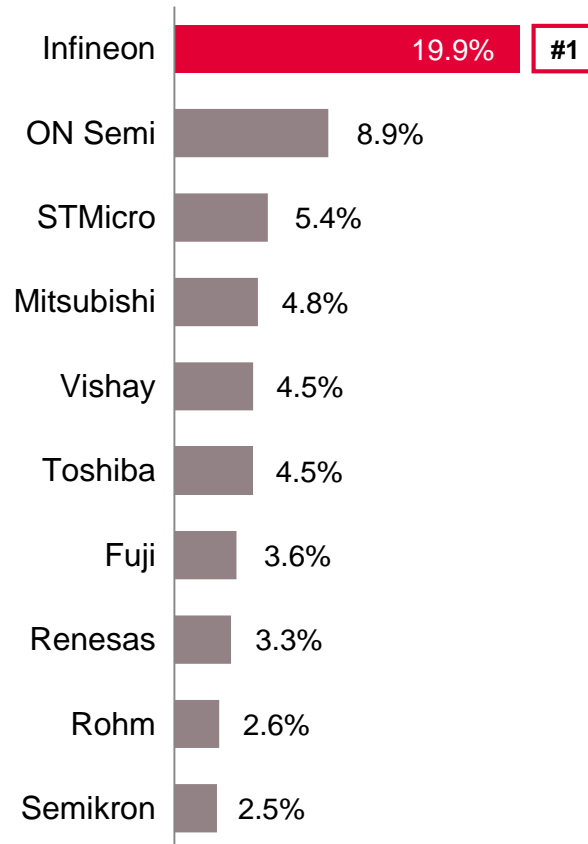
Infineon became a global top-10 player, and the new #3 in the overall microcontroller market



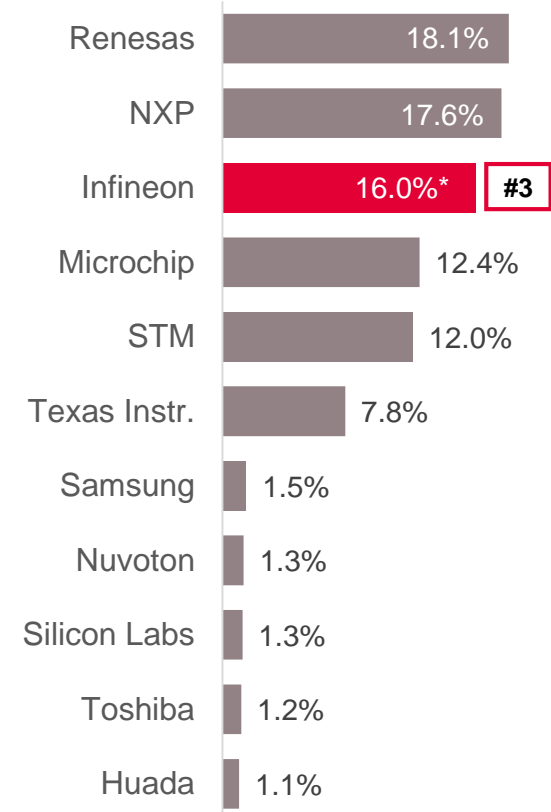
Semiconductor suppliers 2019 total market: \$428bn¹⁾



Power discretes and modules 2018 total market: \$21.0bn²⁾



MCU suppliers 2019 total market: \$17.5bn¹⁾



* pro forma figure

1) Based on or includes research from Omdia, "Annual 2001-2019 Semiconductor Market Share Competitive Landscaping Tool – Q4 2019 v2", March 2020.

2) Based on or includes research from Omdia, "Power Semiconductor Market Share Database – 2018", September 2019.

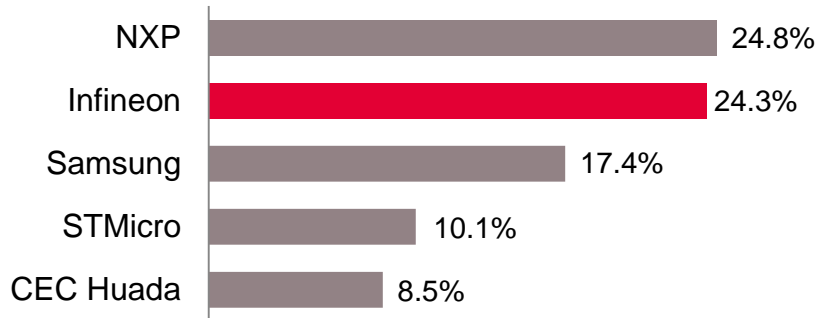
Results are not an endorsement of Infineon Technologies AG. Any reliance on these results is at the third party's own risk.

Infineon remains top player in its target markets: security ICs, NOR Flash, and MEMS microphones



Security ICs

2018 total market: \$3.2bn

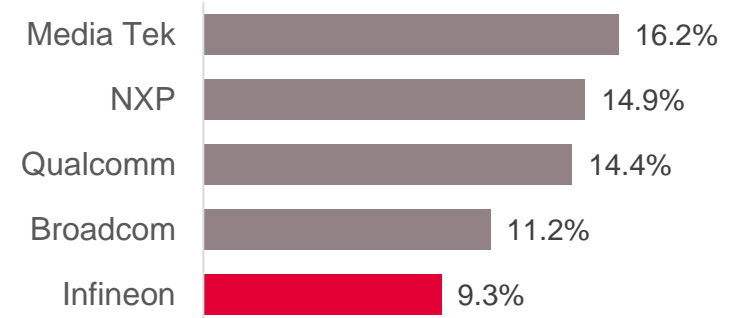


ABI Research, "Smart card & secure ICs", September 2019

Wi-Fi standalone ICs

2018 total market: 917m units

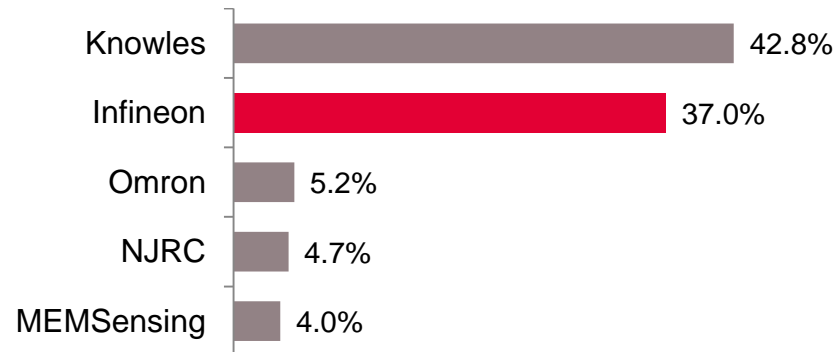
Infineon is focusing on wearables and IoT but not addressing routers, PCs, notebooks, tablets.



ABI Research, "Wireless Connectivity Technology Segmentation and Addressable Markets", November 2019.

MEMS microphones die supplier

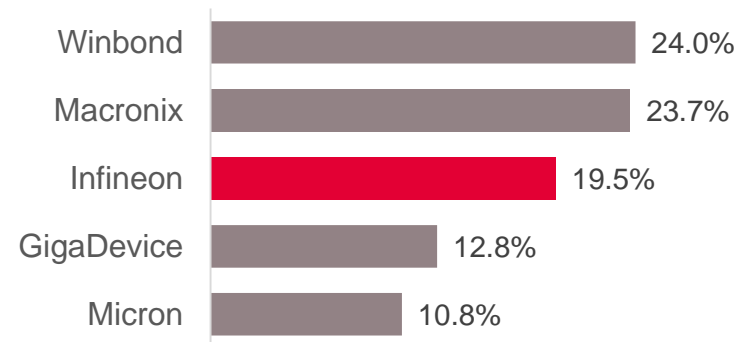
2018 total market: 4.6bn units



Based on or includes research from Omdia, "MEMS Microphone Database 2019", January 2020.

NOR Flash

2019 total market: \$2.2bn



Based on or includes research from Omdia, "Annual 2001-2019 Semiconductor Market Share Competitive Landscaping Tool – Q4 2019 v2", March 2020.

Tight customer relationships, based on system know-how and application understanding



ATV	IPC	PSS	CSS
EMS partners		Distribution partners	

Well-defined roadmap how to capture the value of the deal

16 Apr 2020

FY21

FY23

FY25

FY28

- › generate sustainable procurement effects
- › establish one interface to the customer (OITC)
- › streamlining global shared service center set-up

- › have aligned and prioritized product roadmap with joint P2S concepts in place

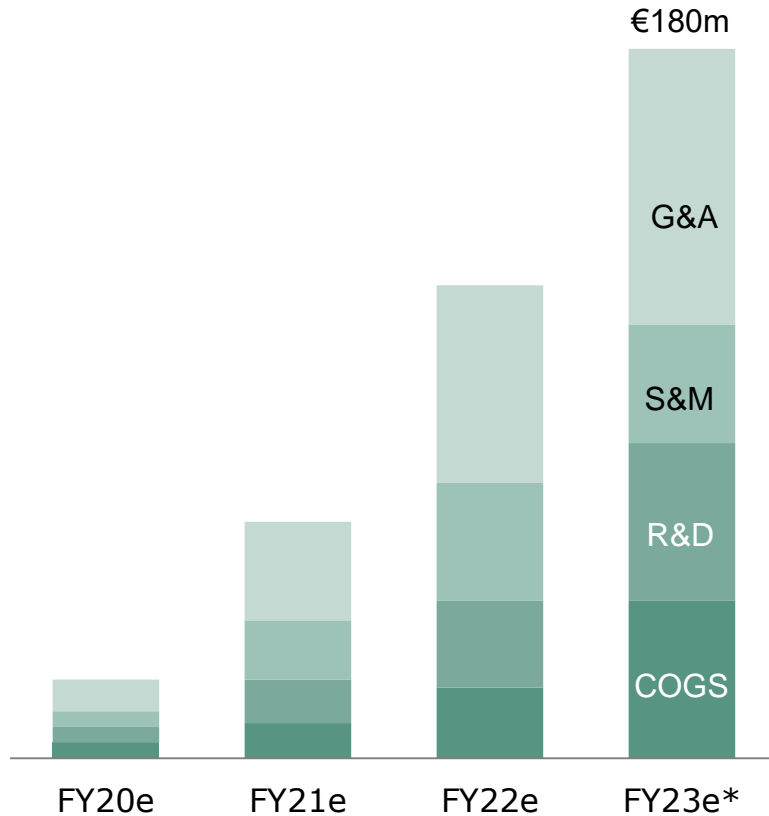
- ✓ › harvest one-time cost synergies (e.g. delisting) and overhead savings (e.g. streamlining top management)
- ✓ › share existing IP and R&D roadmaps to cancel/avoid redundant development efforts
- ✓ › launch customer portfolio management and kick-off G2M push programs
- ✓ › excellent progress even during difficult corona-pandemic environment

- › build on full leverage of revenue synergies
- › launch new wave of P2S products
- › identify additional adjacent and completely new target applications to fuel longer-term growth

- › Several tools in place to track and measure the progress of the integration, e.g. the planned cost and revenue synergies
- › Full commitment to new target operating model

Reaping of cost synergies is making progress; first areas of savings identified

Planned ramp-up of cost synergies



Initial achievements in Q3 FY20

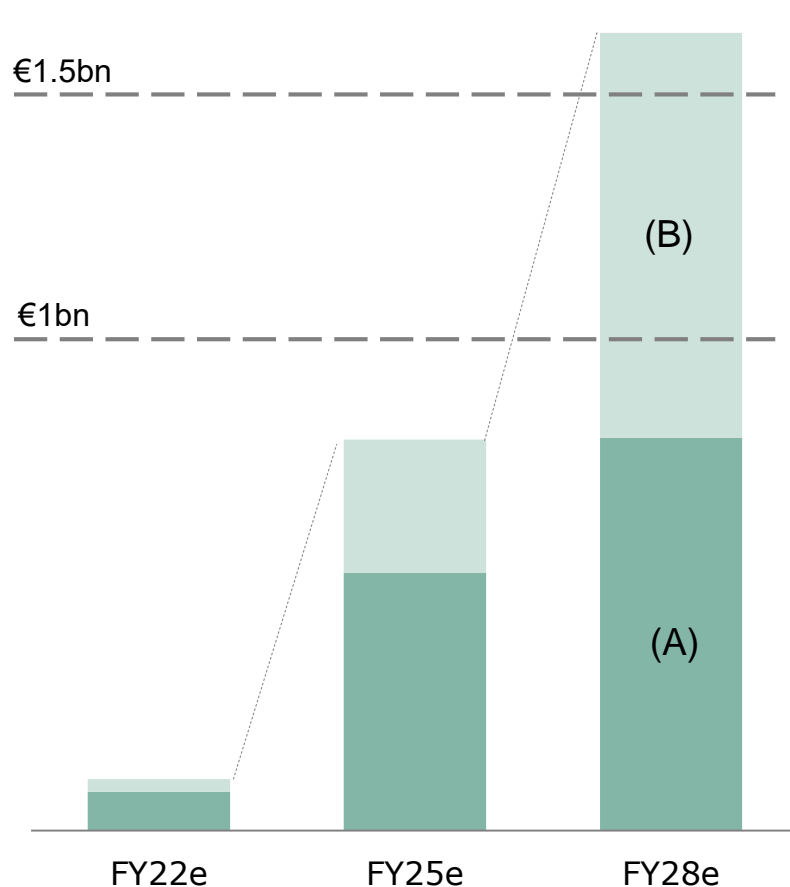
- › optimizing corporate service providers ✓
- › synergies from streamlining board structure ✓
- › efficiency gains in account coverage ✓
- › lifting synergies from external services, e.g. aligning external marketing activities ✓
- › optimize portfolio, reduce overhead ✓
- › alignment of R&D roadmaps ✓
- › procurement for materials and manufacturing services ✓
- › alignment of terms & conditions under negotiation ✓

Expected integration and restructuring costs equivalent to ~1x cost synergies one-off over time.

* Expected cost synergies of €180m p.a. gradually ramping up over approximately three years after closing (16 April 2020). Ramp progression adjusted for later closing and COVID-19 implications.

Value creation by revenue synergies; first projects identified

Planned ramp-up of revenue synergies



Initial opportunities identified in Q3 FY20

(B) P2S for long-term revenue synergy ramp up

- > first cross-divisional and cross-company roadmap discussions kicked-off






(A) Near-term revenue synergy ramp up

- > improved customer access:
 - > opportunity 1 (ATV): sell 8 Mb serial NOR Flash memory into EPS application
- > leverage cross-selling:
 - > systematic application go-to-market support kicked-off for fast execution of revenue synergies
 - > opportunity 2 (IPC): sell PSoC 6 μ C into home appliance application along with iMOTION
 - > opportunity 3 (PSS): sell Bluetooth connectivity and USB controller into wireless charger along with MOSFETs, drivers and security chips



Further improvement of through-cycle target operating model

		Target Operating Model
		Infineon financial performance to approach targets as integration progresses
Revenue growth		9%+ (up from "9%")
Segment Result margin		19% (up from "17%")
Investment-to-sales		13% (down from "15%")

Equity part of refinancing completed; successful bond issue to repay acquisition-related bridge facility



2019

- › Arranging and syndication of acquisition facility ✓
- › Initial equity de-risking in two steps:
 - › €1.5bn via ABB ✓
 - › €1.2bn via dual-tranche hybrid bond ✓

2020

- › Drawdown of acquisition facility and usage of raised funds ✓
- › Investment grade rating of BBB- by Standard & Poor's ✓
- › Completion of equity part via €1.0bn ABB ✓
- › €2.9bn bond issued, with maturities up to 12 years; bridge facility completely repaid ✓

NEXT

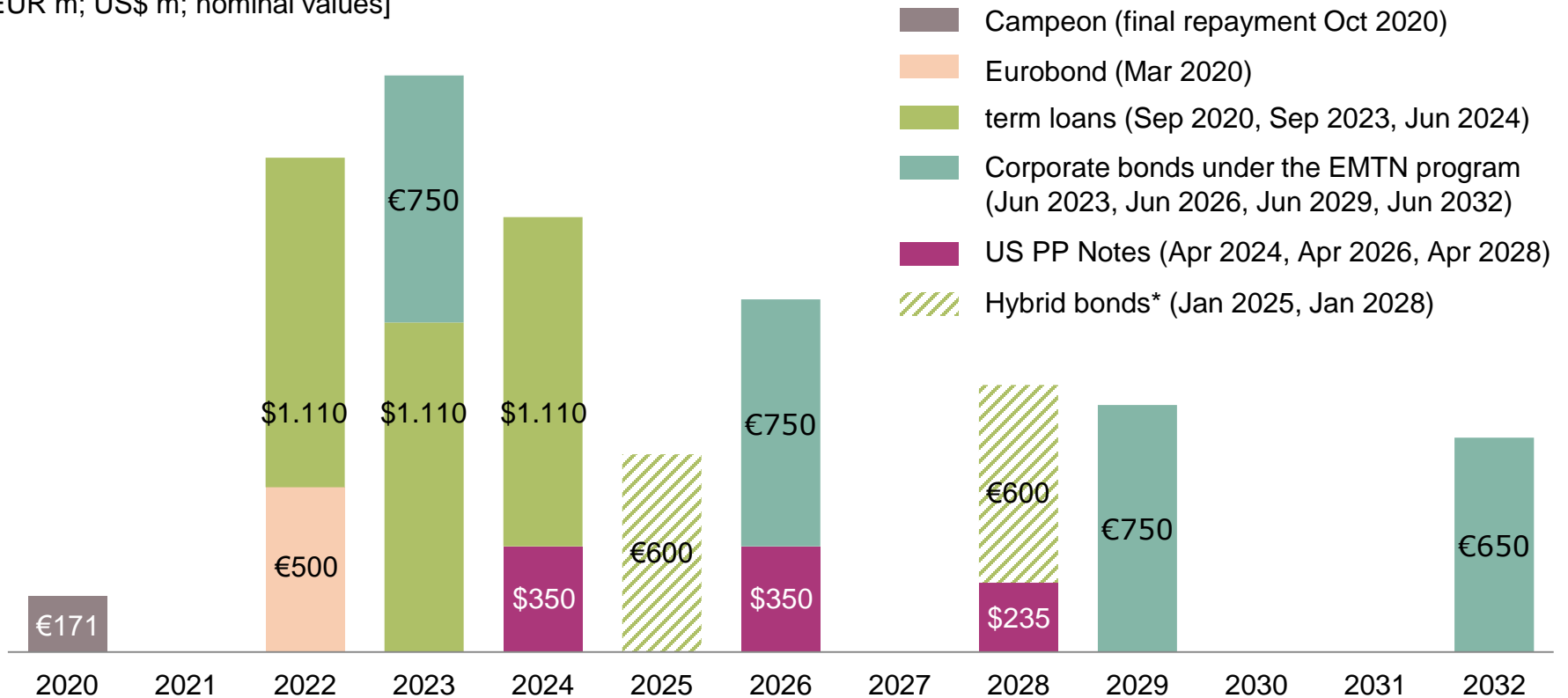
- › Refinancing of remaining term loans (~€3.0bn) with maturities from Sep 2022 to Jun 2024 through debt capital markets
- › Return to target level $\leq 2x$ gross debt / EBITDA over mid-term

Infineon's maturity profile post the €2.9bn bond emission in June 2020



Maturity profile

[EUR m; US\$ m; nominal values]



Note: Additional debt with maturities between 2020 and 2023 totaling €15m of which €4m repayments relate to Campeon.

* On 1 Oct 2019, Infineon issued a perpetual hybrid bond with two tranches: €600m with first call date in 2025 and €600m with first call date in 2028; both are accounted as equity under IFRS.

Outlook for Q4 FY20 and FY20 including Cypress since 16 April 2020 only



	Outlook Q4 FY20*	Outlook FY20*
Revenue	between €2.3bn and €2.6bn	~€8.5bn
Segment Result margin	At the mid-point of the revenue guidance: ~14%	~13%
Investments in FY20		~€1.2bn
D&A in FY20		~€1.3bn**

* Based on an assumed average exchange rate of \$1.15 for €1.00 (previously \$1.10 for €1.00).

** Including the effects of the preliminary purchase price allocation for Cypress



ESG: targets and achievements






Our products and innovations together with an efficient production are key elements to deal with climate change

We contribute a CO₂ reduction of more than 54 million tons



Our net ecologic CO₂ benefit is equal to ...

 <p>The savings of a 1,795 km² photovoltaic powerplant.³⁾</p>	 <p>The average annual electricity consumption of about 86 million people living in Europe.⁴⁾</p>	 <p>48,700 fully occupied flights of an Airbus A380 from Munich to Singapore.⁵⁾</p>
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For footnotes please see page “ESG footnotes” in the appendix.

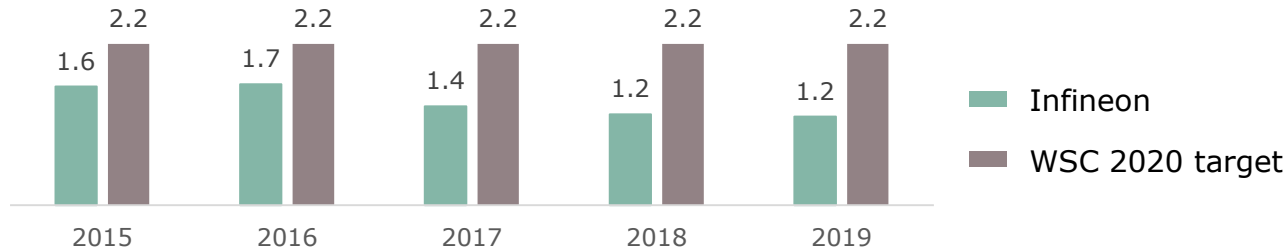
Infineon will become carbon-neutral by 2030

70% CO₂ emissions reduction target in 2025 (Scope 1 and 2 emissions)

1. Avoiding direct emissions and further reducing energy consumption
2. Purchasing green electricity with guarantees of origin for unavoidable emissions
3. Compensate the smallest part by certificates that combine development support and CO₂ abatement

Abatement of Perfluorinated Compounds (PFCs)¹⁾ is one of the most important measures avoiding direct emissions.

Normalized PFC emissions rate in tons of CO₂ equivalent per m² wafer area












Historically, Infineon's normalized emission rate has been below WSC 2020 target of 2.2 tons of CO₂ equivalent per m² wafer area.

1) Namely perfluorinated and polyfluorinated carbon compounds, sulfur hexafluoride (SF₆) and nitrogen trifluoride (NF₃)

External recognitions confirm our engagement in contributing to a sustainable society



		Rating/Score	Scale	Date
	MSCI ESG	AA	CCC to AAA	02/2020
	CDP	B climate scoring B- water scoring	F to A	02/2020
	Ecovadis	98 th percentile “Gold” award	0 to 100	11/2019
	Dow Jones Sustainability Index	79 DJ Sustainability™ World Index listing	0 to 100	09/2019
	Ethibel Sustainability Index Excelece Europe”	Index member	-	06/2020
	ISS ESG Corporate Rating	C+ Prime Status	D- to A+	06/2020
	FTSE4Good Index	Index member	-	07/2020
	Euronext Vigeo Eurozone 120 Index Euronext Vigeo Europe 120 Index	Indices member	-	06/2020
	Sustainalytics	77 “Outperformer” level	0 to 100	06/2020



Automotive



Short- to mid-term market outlook for ATV division's target applications

Application

Market Outlook for H2 CY20

Market Outlook for CY21



Automotive

Car units



- › Jun-Q expected to be the heaviest impacted quarter by COVID-19 with the trough in April
- › Sep-Q and Dec-Q expected to steadily improve



- › Continuous recovery, but overall light vehicle market will not reach pre-crisis level



eMobility

xEV



- › In general, xEV demand more resilient than ICE cars so far. Differences by region:
 - › China and US expected to decline
 - › Europe expected to recover faster pushed by several stimuli programs



- › Incentives by OEMs and governmental programs as well as investments in EV charging infrastructure will strongly drive overall demand in CY21
- › Growth across all major regions expected



Autonomous driving

ADAS/AD



- › In general, negatively impacted by overall reduced car production
- › ADAS/AD: Increasing L2 penetration rates expected due to standardization strategy of some OEMs

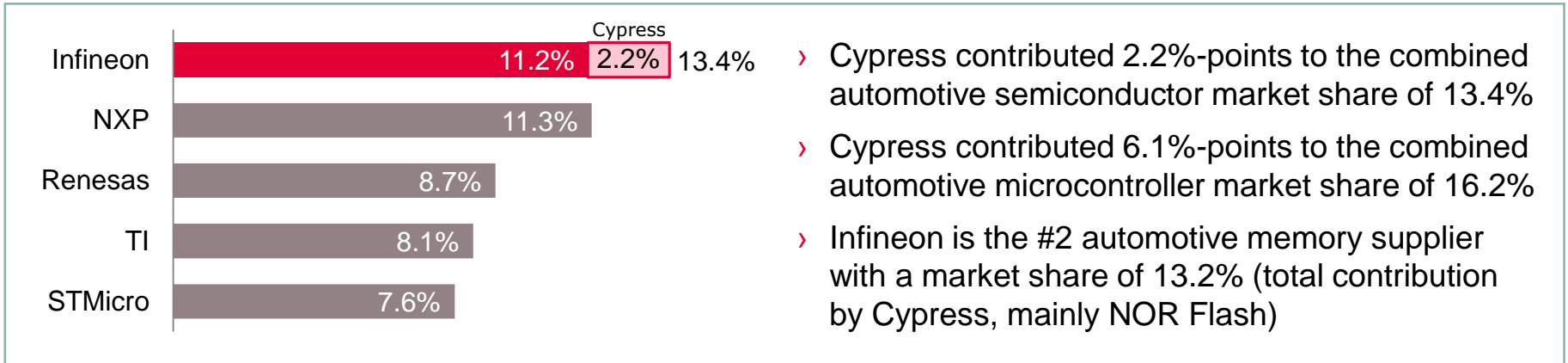


- › Further increase in L2 penetration expected
- › Some progress in regulations towards ADAS will become more concrete; nevertheless no impact yet for CY21

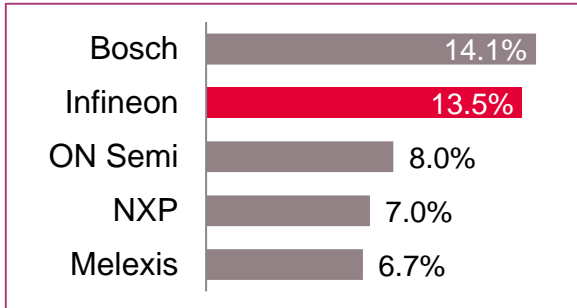
Infineon and Cypress create the new number 1 in the automotive semiconductor universe



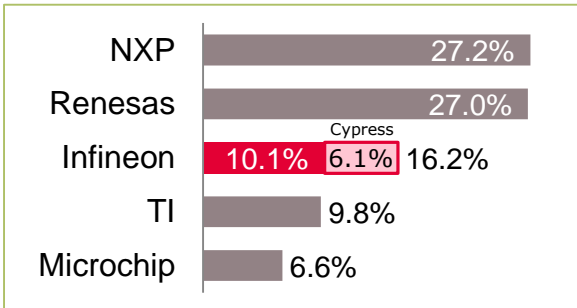
Automotive semiconductors 2019 total market: \$37.2bn



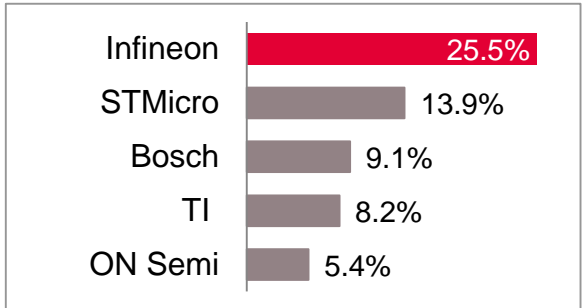
Sensors



Microcontrollers

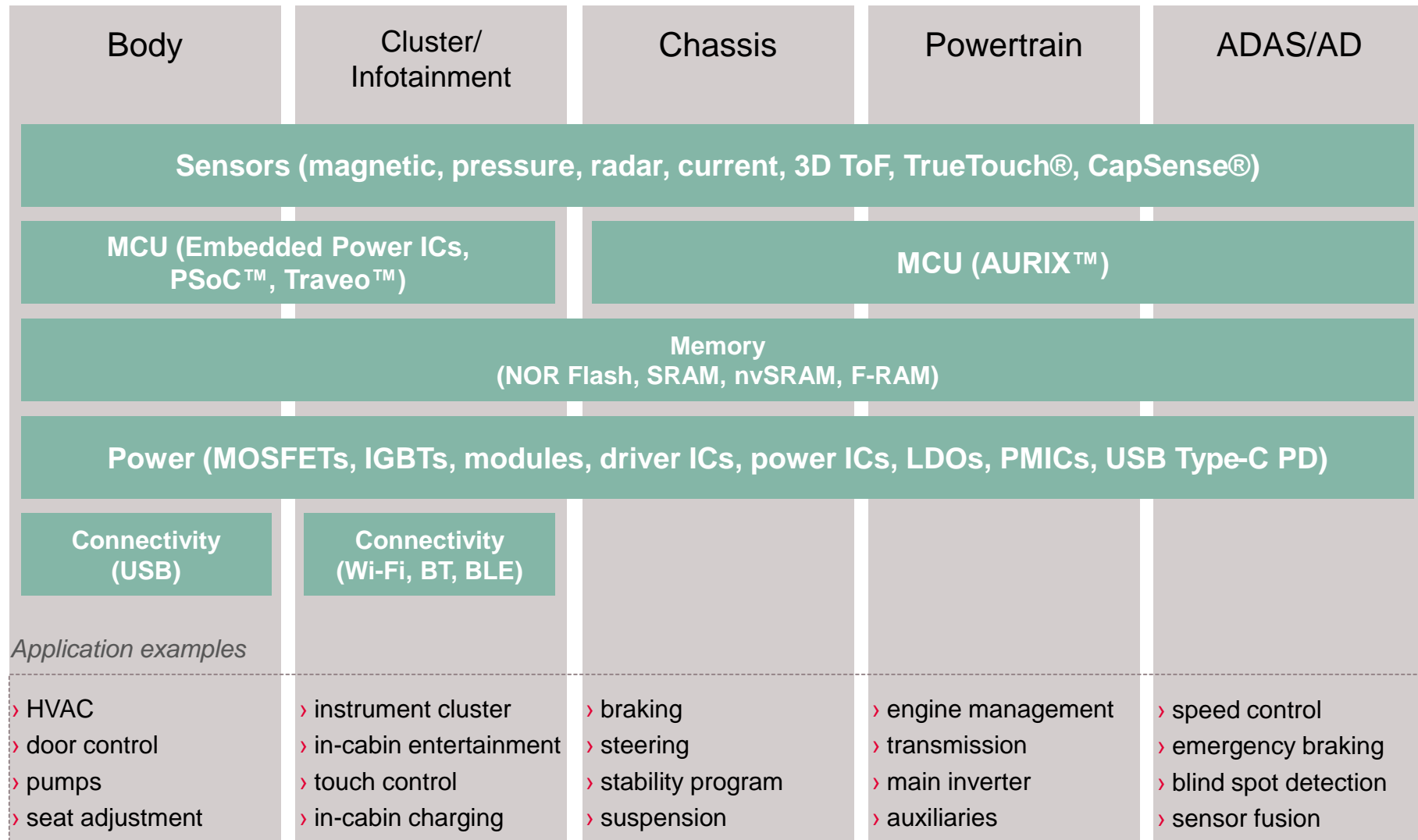


Power



Source: Strategy Analytics, "Automotive Semiconductor Vendor Market Shares v2", May 2020. The acquisition of Cypress by Infineon closed on 16 April 2020. The market shares for 2019 shown here are the combined market shares of Infineon and Cypress based on their individual figures.

Infineon has industry's broadest product portfolio covering entire range of auto applications



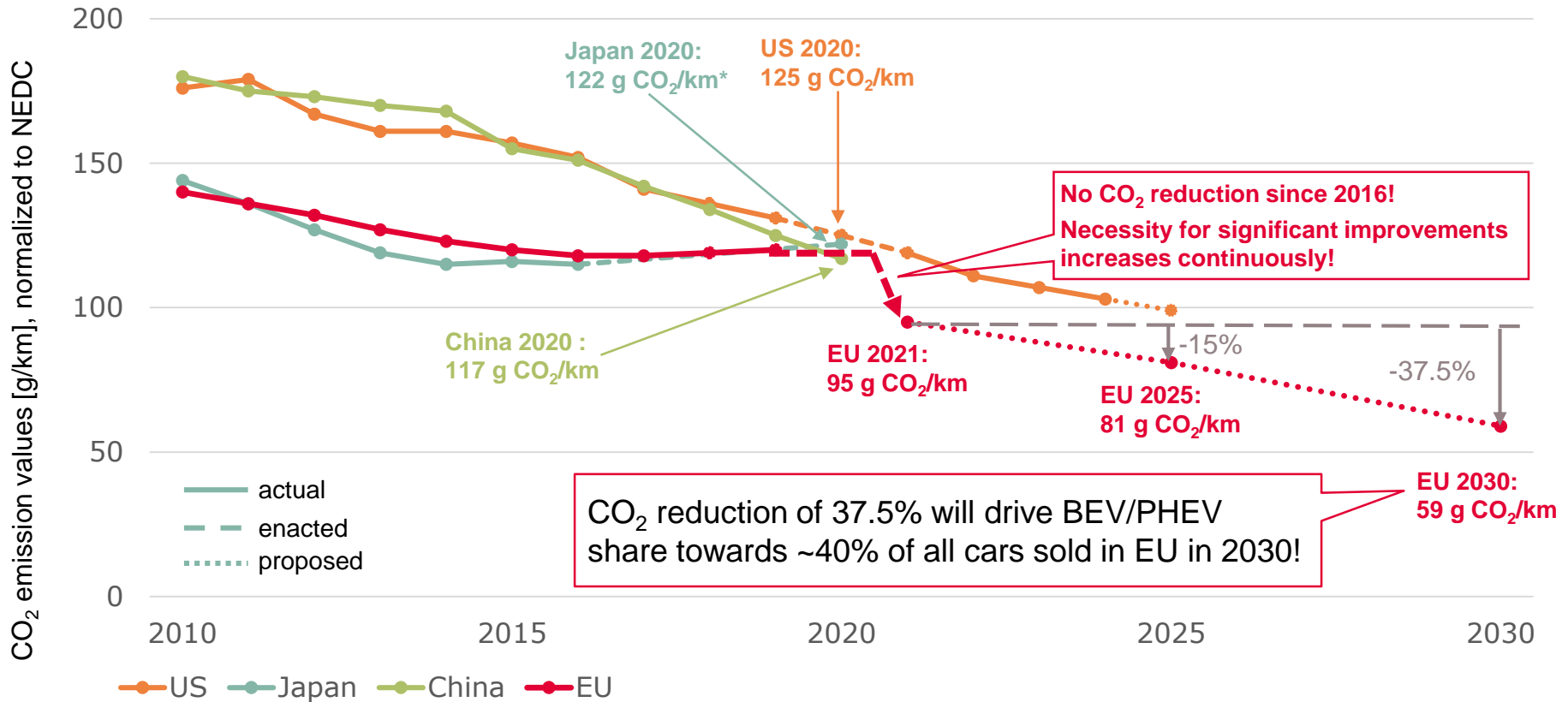


Electro-mobility



xEV growth driven by EU emission regulation; CO2 reduction of 37.5% by 2030 vs 2021

CO₂ emission development and regulations for main regions

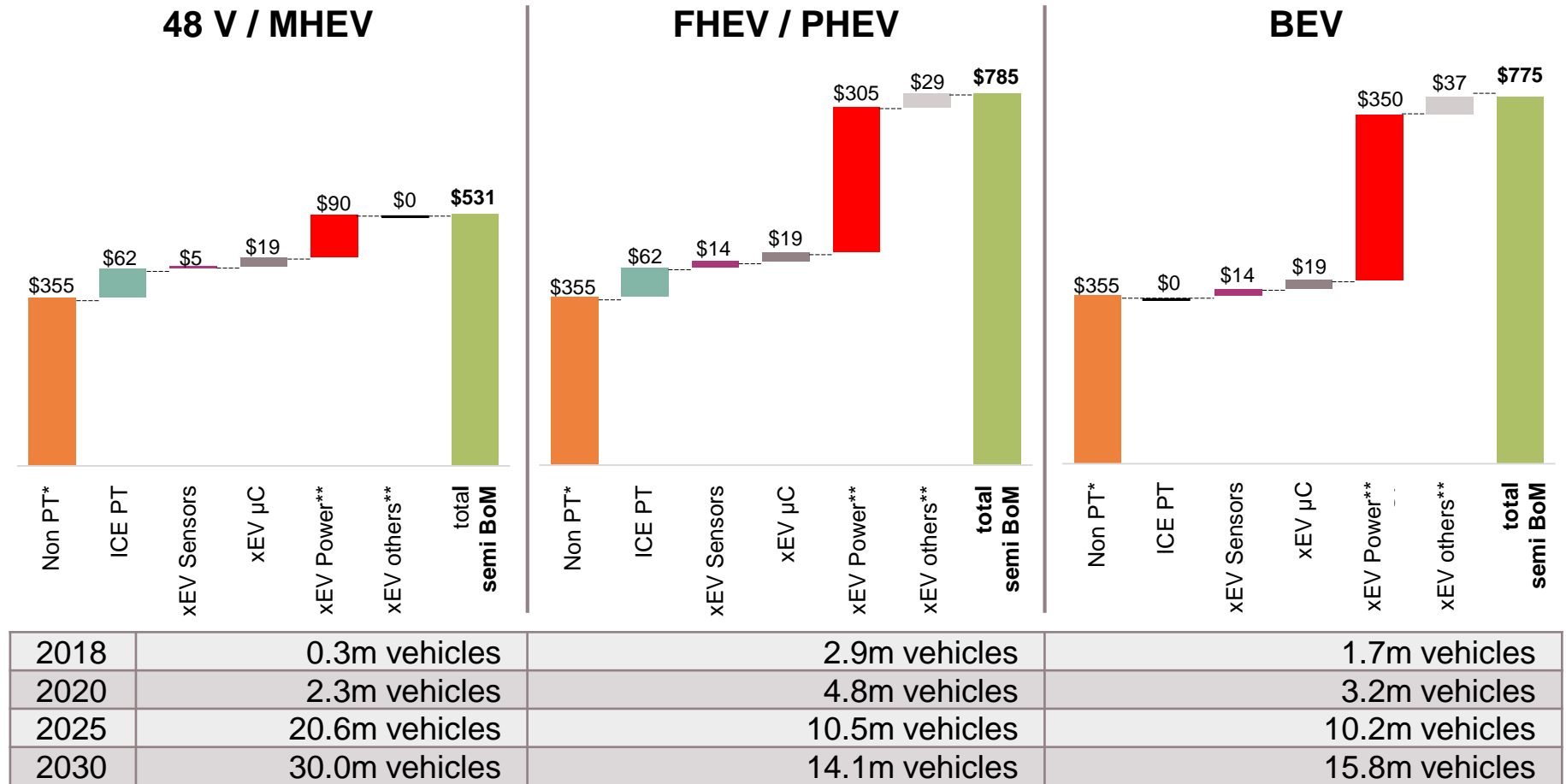


* Japan has already met its 2020 statutory target as of 2013
 Source: ICCT (www.theicct.org), August 2019

The incremental demand of power semiconductors is a significant opportunity



2019 average xEV semiconductor content by degree of electrification



Source: Infineon; IHS Markit, Automotive Group, "Alternative propulsion forecast", September 2019; Strategy Analytics, "Automotive Semiconductor Content", August 2019.

* Non PT (non powertrain): average semiconductor content in Body, Chassis, Safety & Infotainment application segments.

** "power" includes linear and ASIC; "others" include opto, small signal discrete, memory

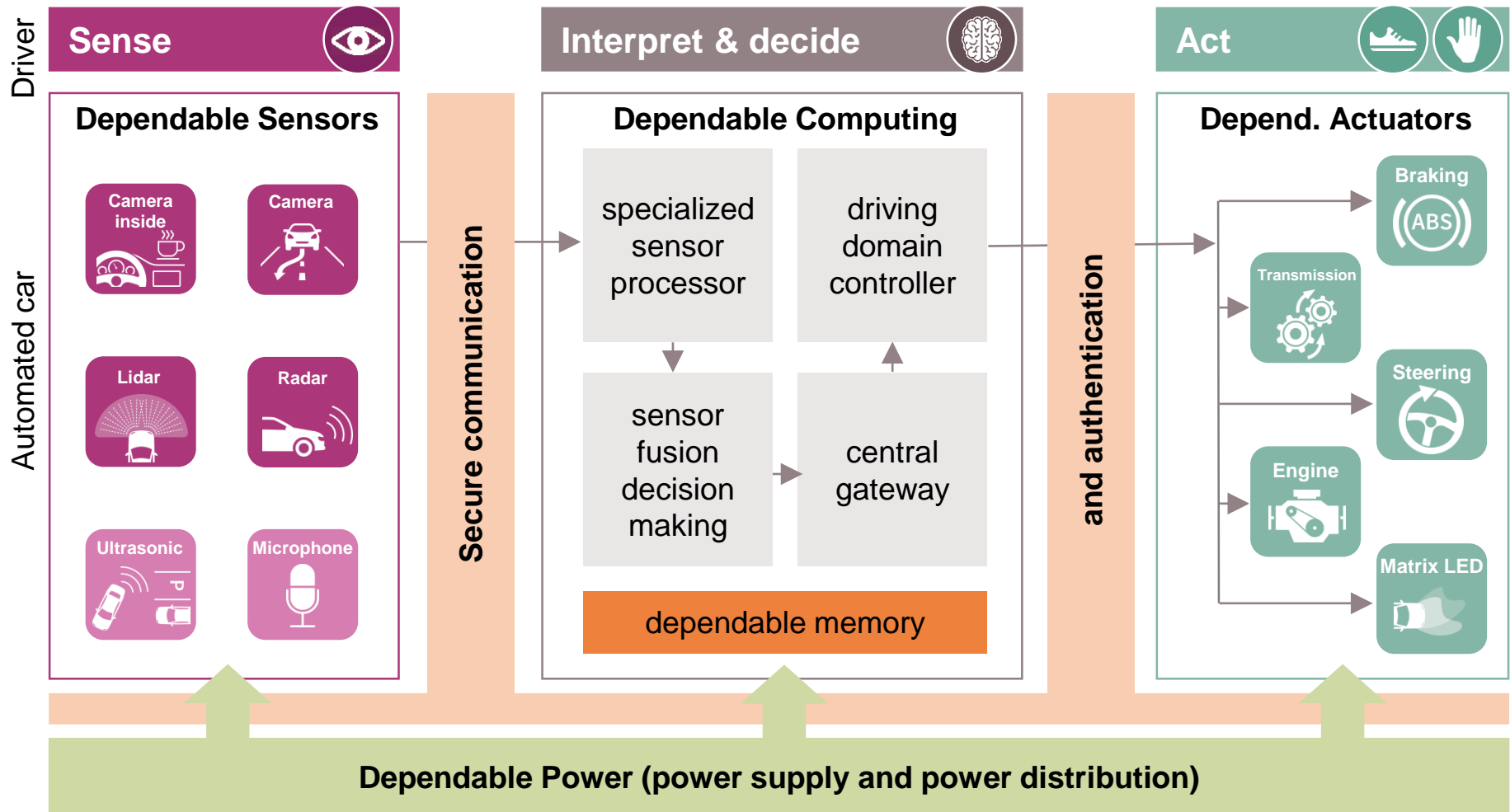


Automated Driving



Vision Zero – AD requires failure-tolerant availability of the system in the environment, “better than a human”

A failure-tolerant system with high availability relies on dependable key functionalities



Infineon's NOR Flash business is benefiting from several structural growth trends



Structural growth drivers for NOR Flash

- › increasing system complexity drives demand for higher off-chip code storage
- › growing number of applications based on high-performance processing units:
 - › code and parameter storage for MCUs, GPUs, MPUs, and other SoCs
 - › configuration data for FPGAs



Automotive

- › ADAS/AD
- › instrument cluster
- › navigation system
- › SOTA update

Industrial

- › programmable logic controller
- › photovoltaic inverter
- › HMI module
- › edge computing

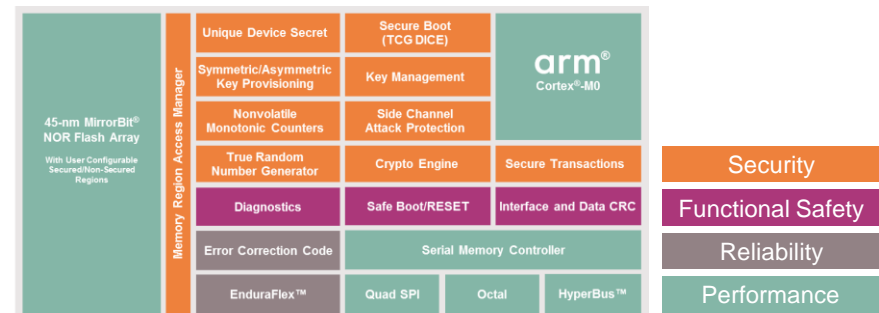
ICT

- › 4G/5G base station: radio access network and baseband
- › enterprise router/switch
- › gateway

Infineon NOR Flash market focus and position

Leadership in high-performance, high-density, reliable, functionally safe and secure NOR

- > Infineon's high-density NOR Flash is used as
 - > boot-code storage
 - > instant-on program memory
 - > execute-in-place (XiP) code memory
 - > data-logging
 - > configuration and parameter storage
- > market leader in high-density products (256 Mb and above) with proprietary MirrorBit™ technology
- > market leader in automotive applications
- > market leader in parallel interface products with long-term supply
- > focus on safety-critical applications in automotive, industrial, and communications
- > best positioned in functional safety (ISO 26262 ASIL-B) and security for ADAS/AD
- > SEMPER™ Secure NOR Flash announced:
 - > world's most secure NOR Flash
 - > hardware root-of-trust
 - > end-to-end protection
 - > flexible architecture
 - > combined functional safety and security



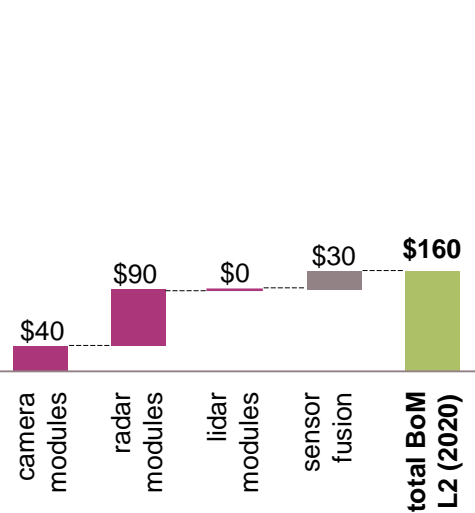
ADAS/AD semi growth driven by radar and camera sensor modules over the next 5 years



Average semiconductor content per car by level of automation at the given years

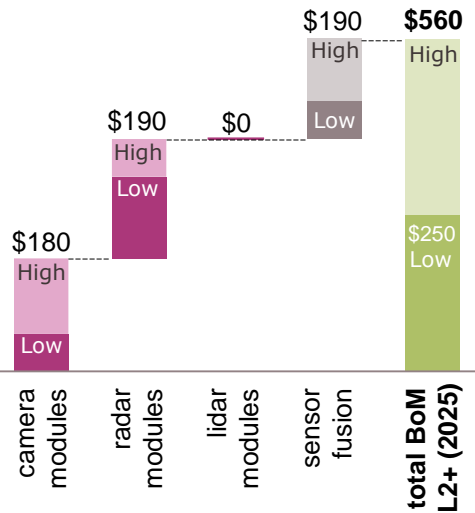
NCAP 5 Star/AD L2

L2 vehicles in 2020: ~6m



AD L2+

L2+ in 2022: ~1m
L2+ in 2025: ~2.5m



AD L3

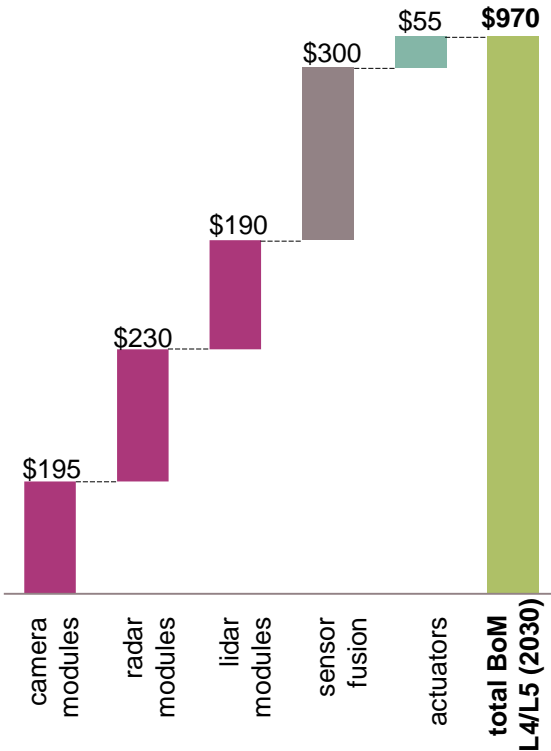
L3 in 2025: ~1.5m

\$630

total BoM L3 (2025)

AD L4/L5

L4/L5 vehicles in 2030: ~4m



Source: Strategy Analytics; Infineon.

BoM contains all type of semiconductors (e.g. radar modules include μ C); sensor fusion does not include memory. BoM are projected figures for the respective time frame.

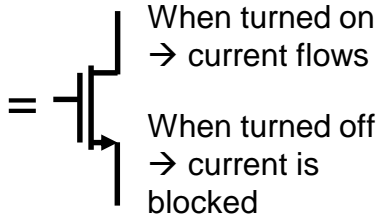




Infineon's Power Strategy

Infineon's portfolio covers the entire range of power and frequency

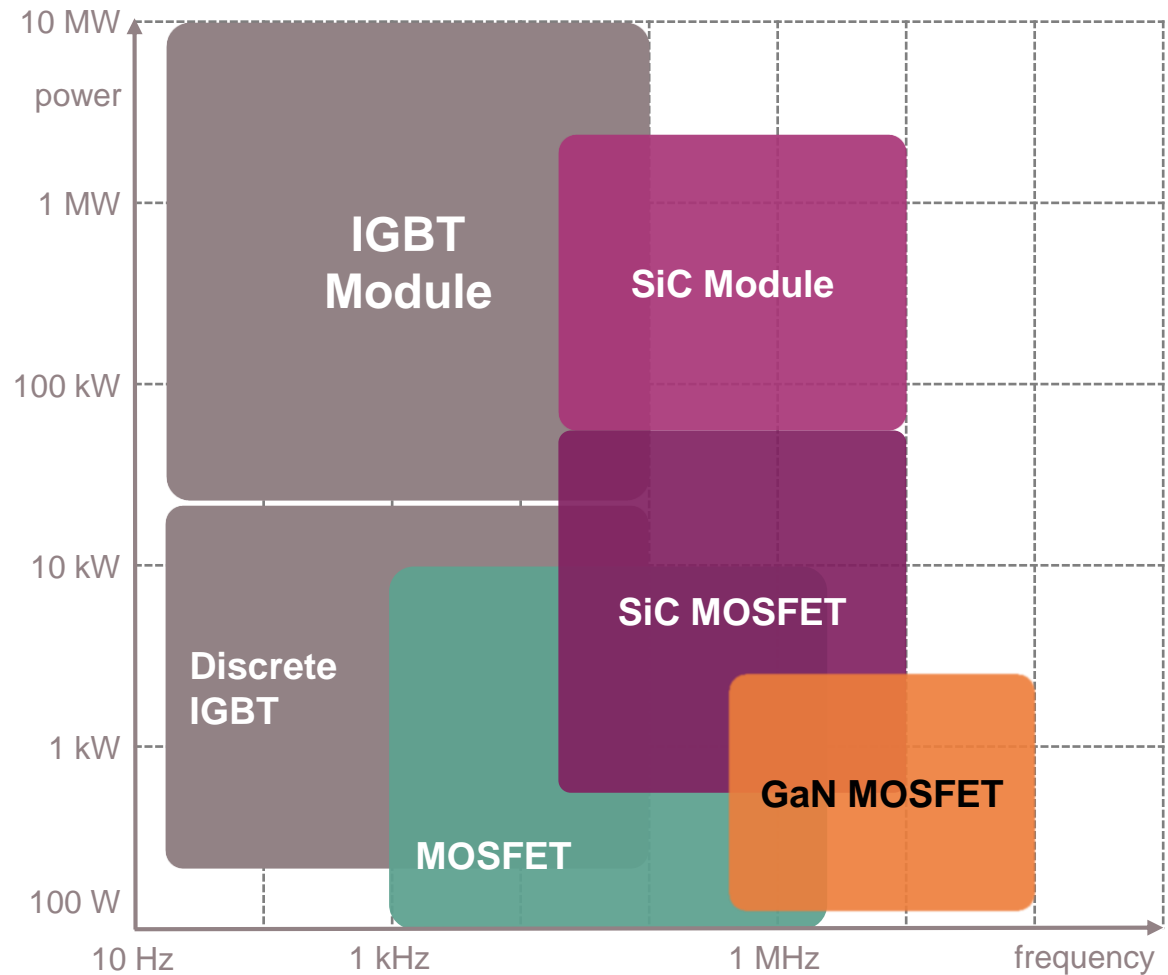
What is a power switch?



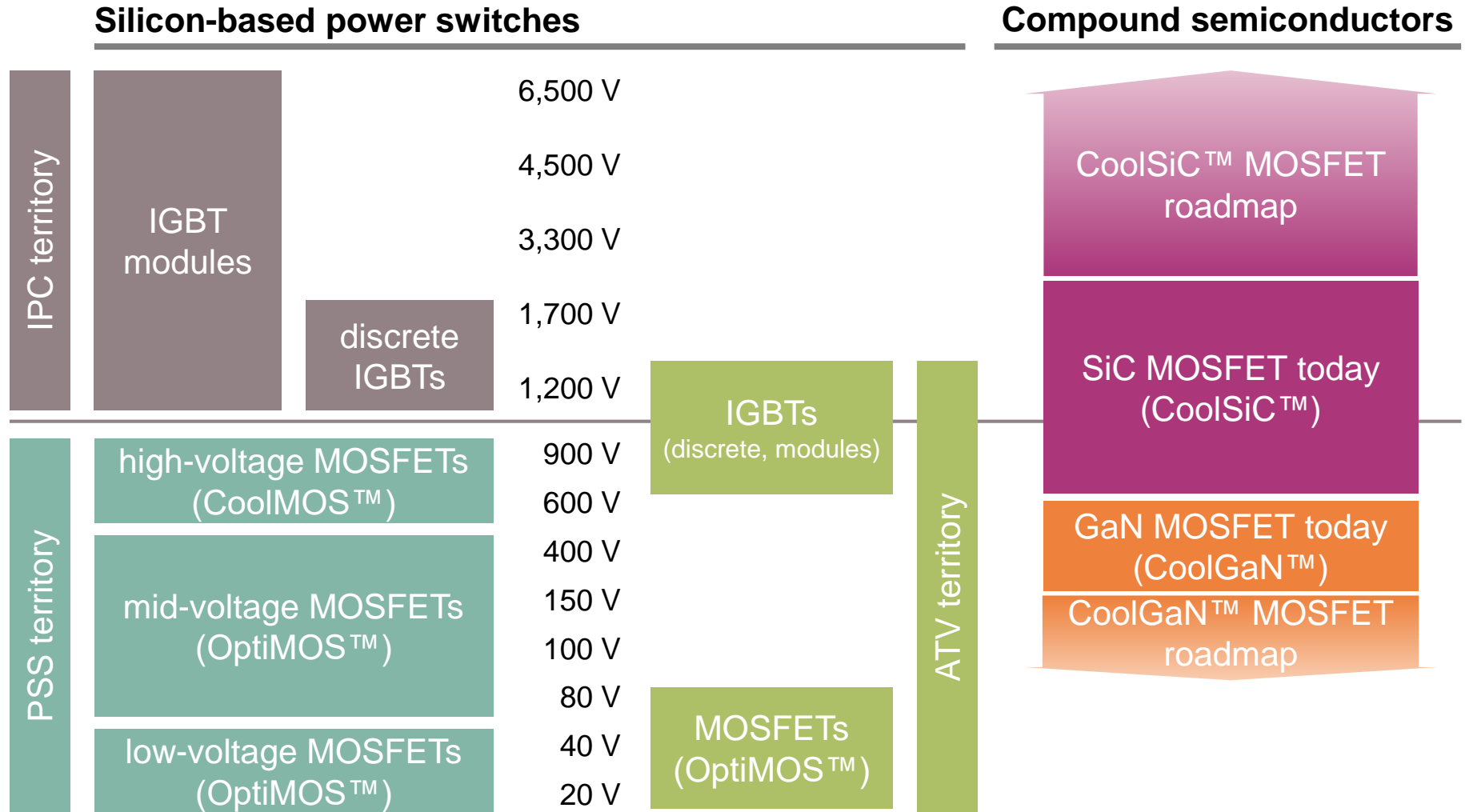
What counts?

- › Losses in on-state ($R_{(DS)on}$)
- › Heat dissipation
- › Max. switching frequency
- › Die size
- › Package size (form factor)

How are power switches categorized?



Infiniteon's discrete power portfolio* is basically separated by voltage classes



* excluding drivers and control ICs

Strong CoolSiC™ portfolio expansion: by packages and by voltages

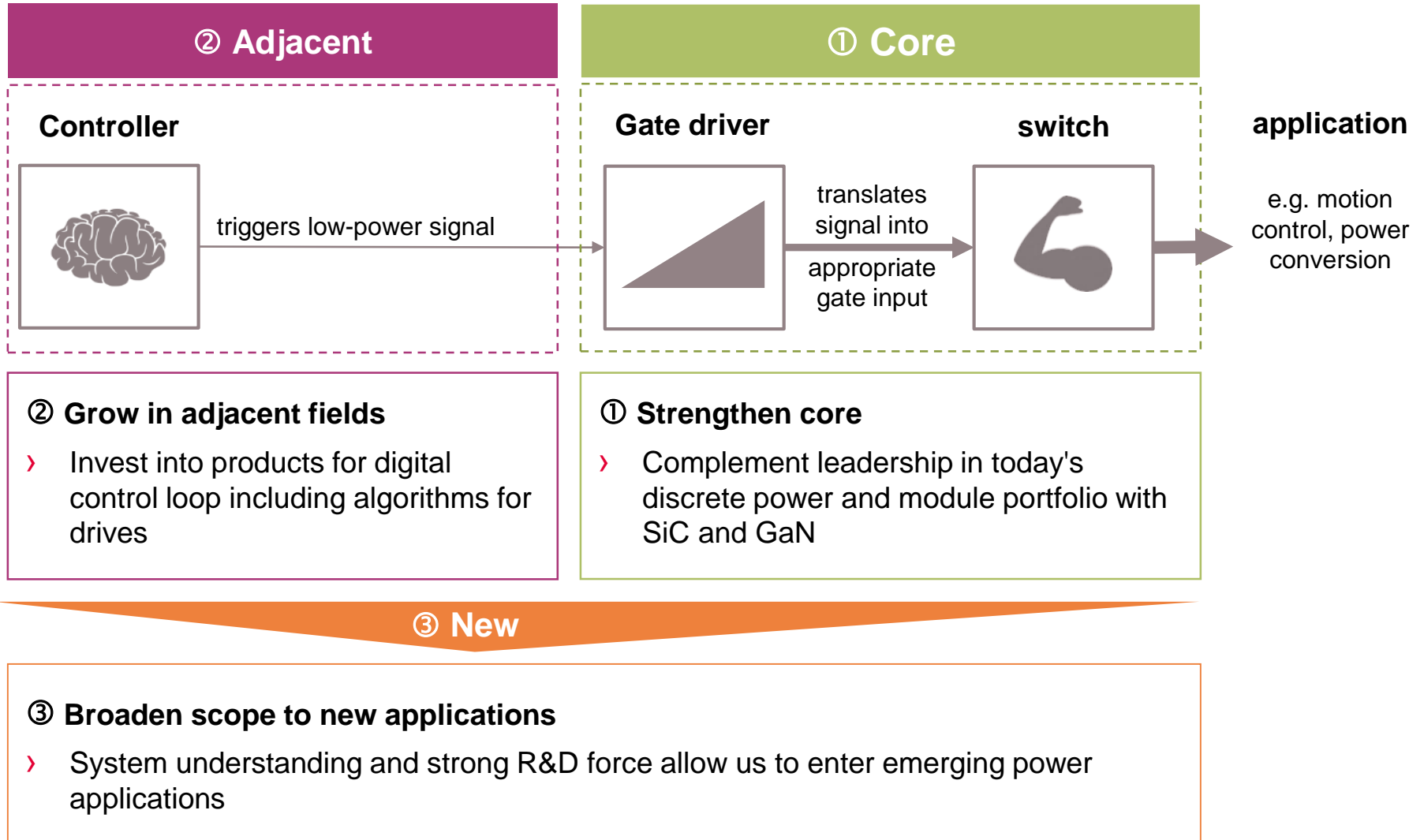


Broadest and best-in-class SiC portfolio

		Industrial					Automotive grade		
package options	CoolSiC™ Diode	CoolSiC™ Hybrid		CoolSiC™ MOSFET			CoolSiC™ Diode	CoolSiC™ MOSFET	
	Discrete	Discrete	Module	Discrete	IPM	Module	Discrete	Discrete	Module
voltages									
600 V									
650 V		Expected in 2020							
1200 V					Expected in 2020				Exp. in 2020
1700 V									

Continuous expansion of portfolio

Three strategic levers to outgrow the power semi market: "core – adjacent – new"



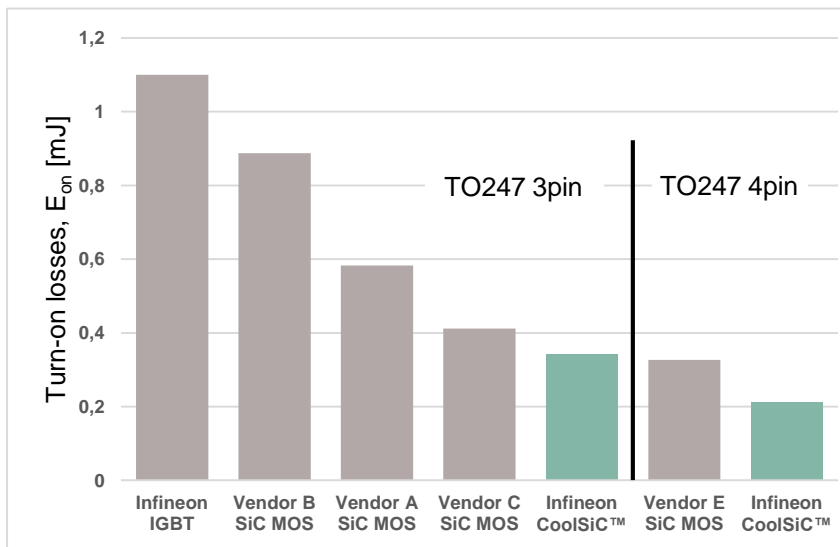
Second generation (2nd Gen.) CoolSiC™ Trench MOSFET will increase the addressable market

1st Gen. CoolSiC™ Trench MOSFET is the leading technology today



2nd Gen. CoolSiC™ Trench MOSFET is in advanced development phase

1st Gen. with lowest losses



Source: Infineon, datasheets on supplier web pages, September 2019.

1st Gen. CoolSiC™ Trench MOSFET has set the industry benchmark

2nd Gen. will expand the lead

- › Enhanced power handling capability by 25% – 30%
- › Enhanced safe operating area without compromising quality
- › Enabling SiC in further high volume applications

2nd Gen. CoolSiC™ Trench MOSFET will significantly enlarge the market size for SiC MOSFETs

Status of implementation of Cold Split technology

Process tools

- › Design and production of semi-automated process tool park completed in Dresden

Clean room

- › Clean room ready for manufacturing by end of calendar year 2020

Process flow

- › Integration of individual process steps into complete work flow

1/3 of the industrialization journey accomplished

Wafer splitting by 2022

- › Wafer for splitting are already available
- › Increases # of wafers up to a factor of 2

Boule splitting by 2023

- › Boules start to become available
- › Increases # of wafers by a factor of 2.0 in a first step, with potential for a factor of 2.6

Combining boule splitting and wafer splitting will make the most efficient process

Infineon is ready to support and shape the growing SiC device market

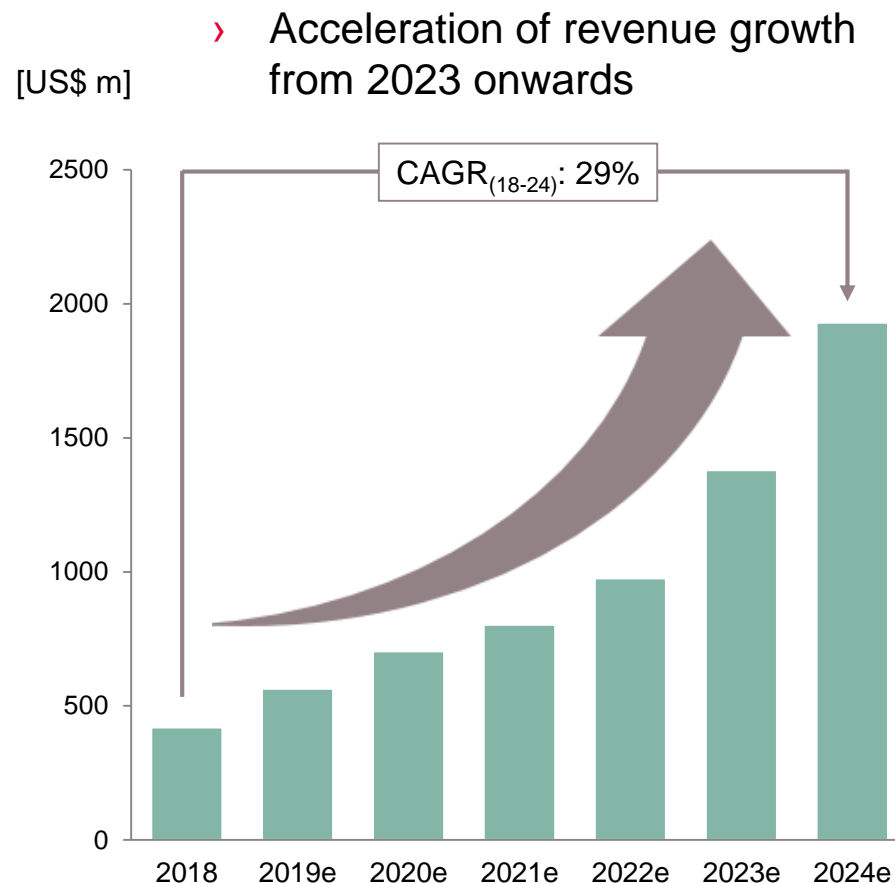
Today

- > Leading Infineon technology with 1st Gen. CoolSiC™ Trench MOSFET
- > Already broad, fast growing portfolio
- > System expertise and customer access

Strategic projects to support growth

- > 2nd Gen. CoolSiC™ Trench MOSFET
- > Cold Split: wafer and boule
- > Manufacturing lines already capable of processing 200 mm diameter

SiC device market revenue












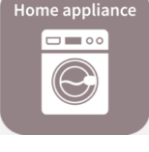





Source: Yole, " Power SiC 2019: Materials, Devices and Applications 2019", July 2019.



Industrial Power Control



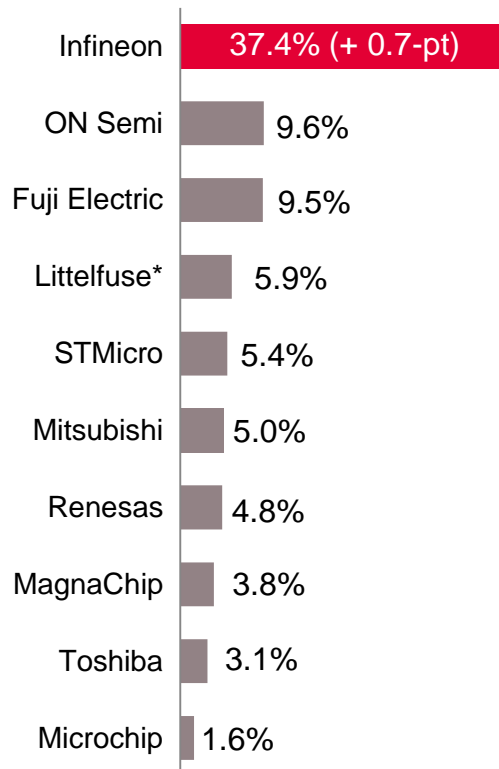
Short- to mid-term market outlook for IPC division's target applications

Application	Market Outlook for H2 CY20	Market Outlook for CY21
 <p>Motor drivers</p>	 <ul style="list-style-type: none"> › Industrial drives expected to contract due to push-outs in manufacturing equipment investments 	 <ul style="list-style-type: none"> › Industrial drives highly correlated to GDP › recovery earliest in H2 CY21
 <p>Solar</p>	 <ul style="list-style-type: none"> › Recovery supported by China subsidy awards in late June 	 <ul style="list-style-type: none"> › Total installations forecasted close to pre-crisis levels with upside potential in China and Europe
 <p>Wind</p>	 <ul style="list-style-type: none"> › Growth may be not as strong as expected due to installation delays but higher than in CY19 	 <ul style="list-style-type: none"> › Self-sustainable growth due to long-term drivers and increasing competitiveness
 <p>Home appliance</p>	 <ul style="list-style-type: none"> › Run-rate of appliance shipments back to seasonal pattern; growth driven by China energy efficiency program for air conditioners; partly offset by home appliance retailer inventory levels 	 <ul style="list-style-type: none"> › Growth driven by catch-up effects of delayed purchases as well as energy efficiency incentive programs
 <p>Traction</p>	 <ul style="list-style-type: none"> › Weaker passenger volume leads to short-term pushouts in China 	 <ul style="list-style-type: none"> › Long-term drivers ensure steady stability, although growth depends on stimuli programs in China and Europe

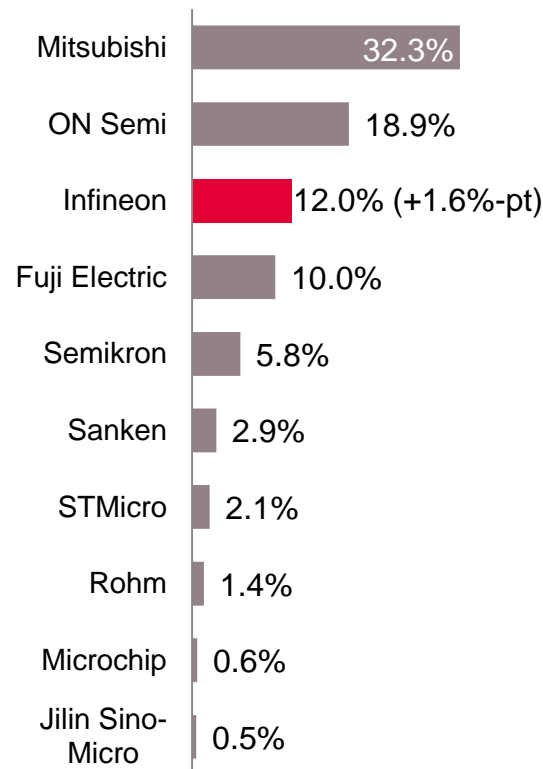
Clear leader in discrete IGBTs and IGBT modules; IPMs strengthened again



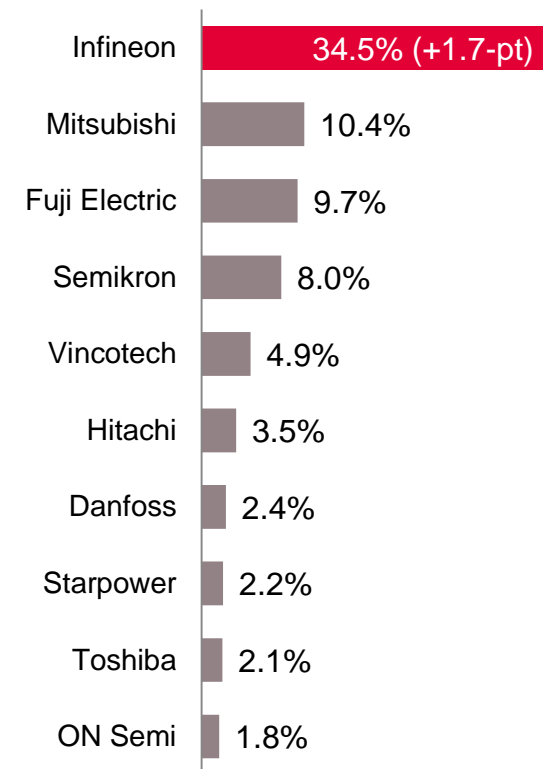
Discrete IGBTs 2018 total market: \$1.31bn



IPMs 2018 total market: \$1.68bn



IGBT modules** 2018 total market: \$3.25bn



* Littelfuse acquired IXYS Corporation in January 2018. Both companies are reported separately in 2017 and combined as Littelfuse in 2018.

** Including standard (non-integrated) IGBT modules and power integrated modules (PIMs) / converter inverter brake (CIB) modules.

Source: Based on or includes research from Omdia, "Power Semiconductor Market Share Database 2018", September 2019.

Due to the extensive power module portfolio Infineon can address the whole range of drives applications



Servo drives



370 W 75 kW

- Requirements
- > high positioning accuracy
 - > fast response with no overshoot
 - > high reliability

- Key applications
- > robotics
 - > material handling
 - > machine tools



- Infineon products
- > CIPOS™ IPM
 - > Easy 1B
 - > Easy 2B

Low-power drives*



370 W 500 kW

- > performance and reliability
- > safety features
- > good price/performance ratio

- > pumps and fans
- > process automation
- > cranes
- > marine drives



- > iMOTION™
- > CIPOS™ IPM
- > EasyPACK™
- > EconoPACK™

Mid- and high-power drives



500 kW 10 MW

- > safety
- > durability
- > high reliability and low downtime

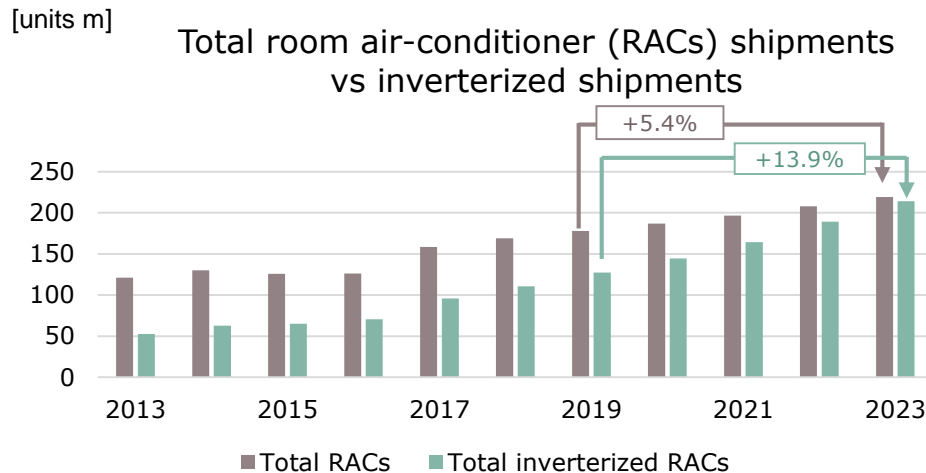
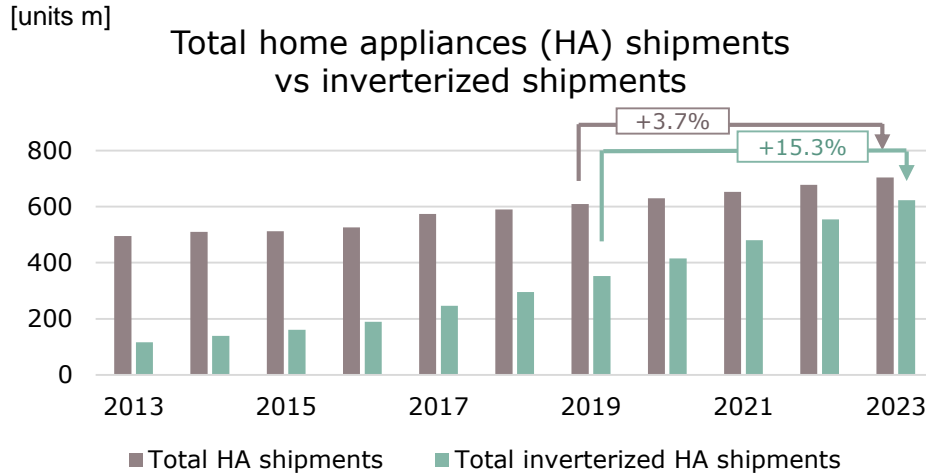
- > oil & gas industry
- > chemical industry (e.g. air compressors)
- > cement mills



- > PrimePACK™
- > IHM
- > IHV

* Low-power drives include compact drives, standard drives, premium drives and brushed DC drives.

Growth in HAs supported by ongoing inverterization and sustained growth of overall number of RACs



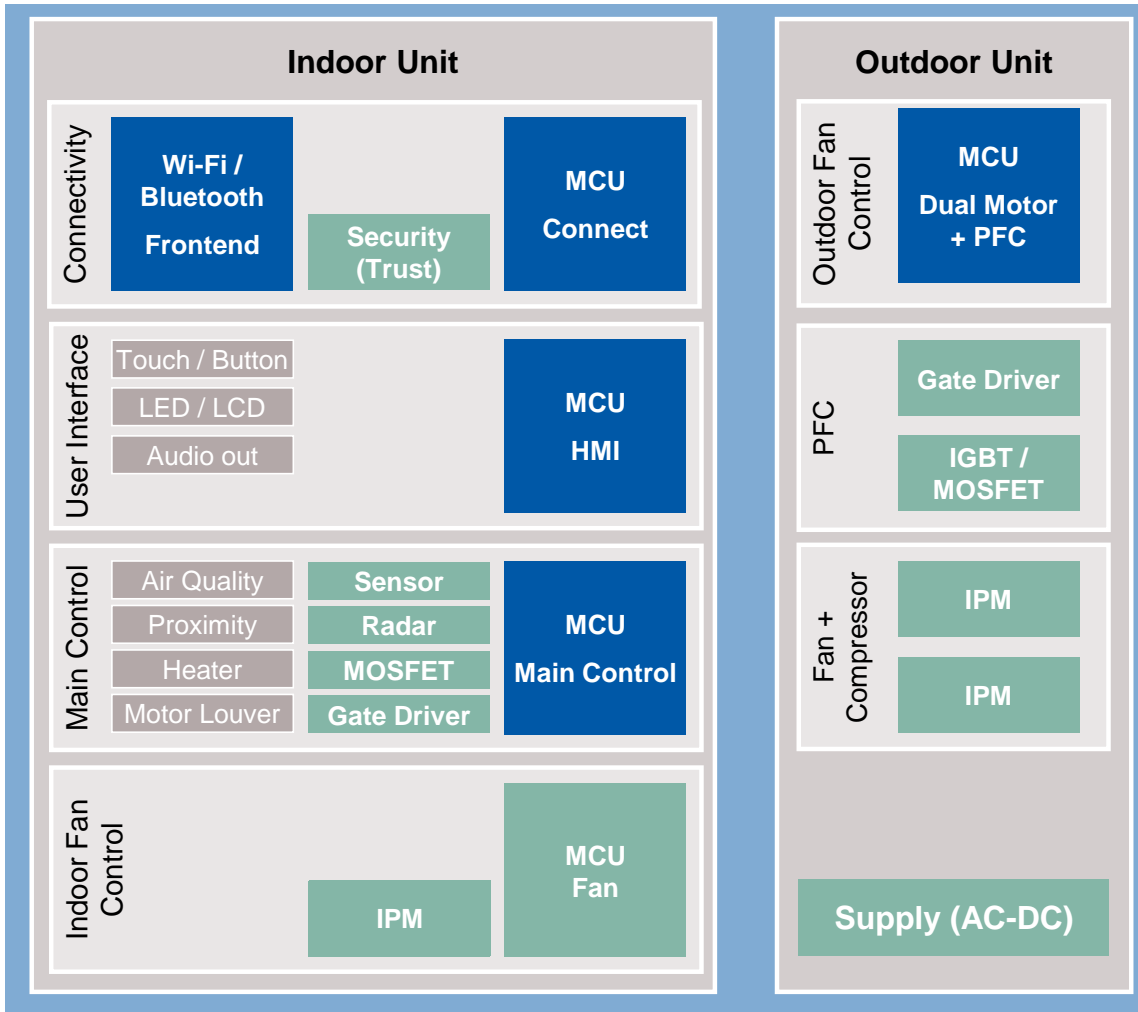
- > Inverterization of home appliances driven by energy efficiency regulations
- > Room air-conditioners accounting for roughly half of IPC's addressable HA market (based semiconductor TAM)
- > Room air-conditioners and washing machines currently stand at ~75% inverterization penetration rate
- > Growth of inverterized room air-conditioners also sustained by overall shipment figures (> 5% y-y) with demand expected to further increase due to ongoing population growth and urbanization in warmer climate zones
- > Inverterization of cooling appliances (fridges, freezers, coolers; third most-important appliances type for weighted semiconductor TAM) still < 50%

Source: Based on or includes research from Omdia, "Major Home Appliance Market Report 2019", August 2019

With the combined portfolio Infineon can offer full system solutions



Example: air-conditioning system



What makes system solution attractive to customers?

- > **Ease of design**
⇒ combined portfolio covers all relevant system components
- > **Superior quality**
⇒ integrated solution ensures MCU, power stage and peripherals work perfectly together
- > **Faster time-to-market**
⇒ no additional integration or software development costs

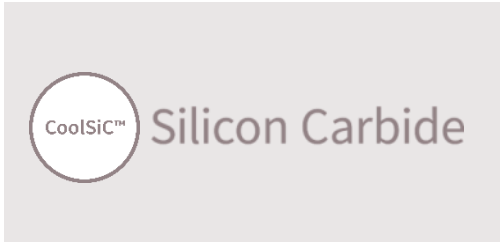
Infineon heritage

Cypress heritage

What comes next?

Mid- to long-term structural growth opportunities

Core



new material

Adjacent



solar pumps

New area



fuel cell



EV charging



energy storage



eMarine



collaborative robots



eDelivery vehicles


















eAviation



Power & Sensor Systems



Short- to mid-term market outlook for PSS division's target applications

Application	Market Outlook for H2 CY20	Market Outlook for CY21
 computing	 <ul style="list-style-type: none"> › Computing shows resilience based on increased data traffic and acceleration towards cloud servers 	 <ul style="list-style-type: none"> › Long-term drivers ensure to sustainable growth
 communications	 <ul style="list-style-type: none"> › 5G infrastructure investment push strongly supported by government programs 	 <ul style="list-style-type: none"> › Strong momentum expected to continue
 smartphones	 <ul style="list-style-type: none"> › Deteriorated consumer sentiment depressing demand › Tendency to mid-tier phones 	 <ul style="list-style-type: none"> › Strong rebound expected › Especially 5G-enabled high-end phones profiting
 consumer	 <ul style="list-style-type: none"> › Household budget uncertainties lead to softening of consumer market 	 <ul style="list-style-type: none"> › Catch-up of delayed purchases leading to market pick-up
 Industrial	 <ul style="list-style-type: none"> › While sub-applications like auto and lighting are affected strongly, others such as battery-powered tools show strong momentum 	 <ul style="list-style-type: none"> › Speed of recovery in sub-segments will vary

PSS's growth is built on many applications from different sectors in power and non-power

Computing



- > data center
- > enterprise server
- > PC, notebook
- > peripherals

Industrial



- > power supplies
- > EV on-board charger
- > PV inverter
- > power tools
- > lighting
- > Industry 4.0
- > Internet of Things

Consumer / Misc



- > eBikes, eScooter
- > multicopter
- > aviation
- > LSEV
- > space
- > gaming
- > smart home

Communications



- > smartphones
- > mobile devices
- > wearables
- > 5G massive MIMO



● AC-DC (power) ● DC-DC (power) ● RF and sensors (non-power)



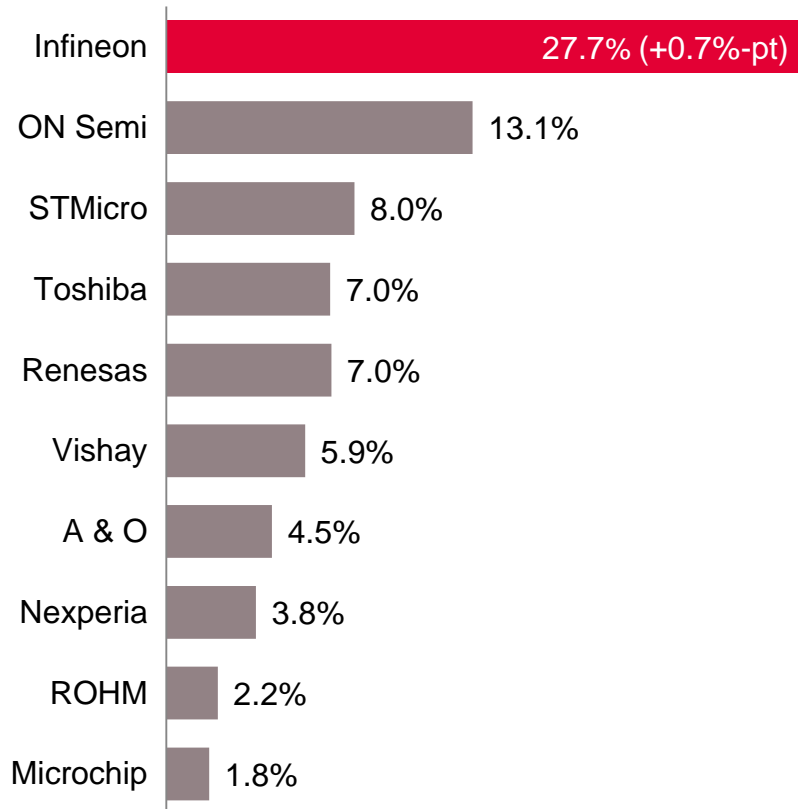
PSS – Power



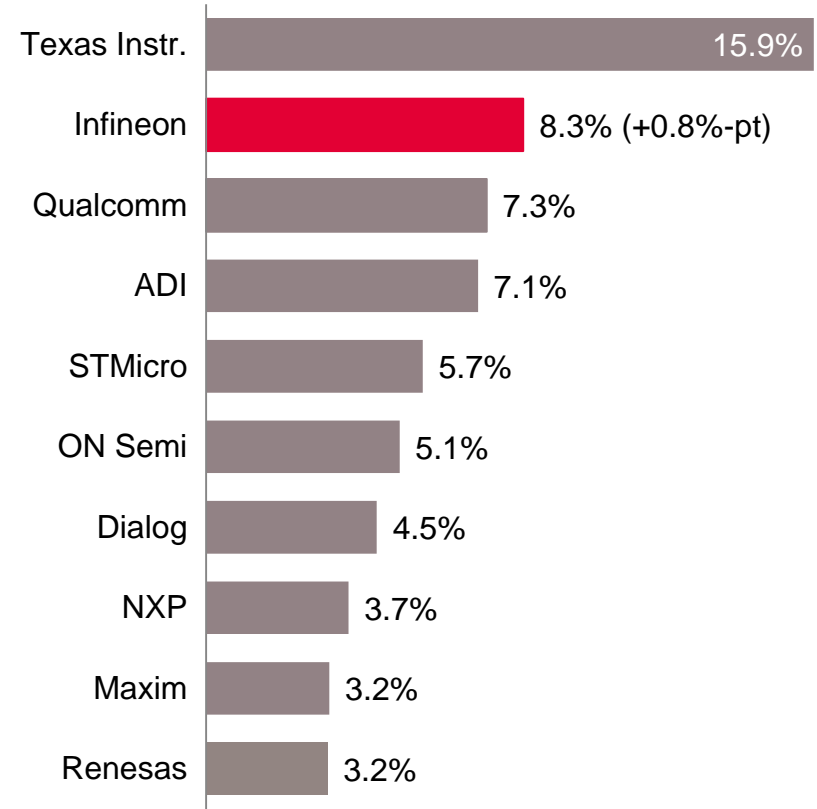
Infineon is the clear leader in MOSFETs; growth potential in power ICs



Discrete Power MOSFETs 2018 total market: \$7.58bn



Power ICs 2018 total market: \$25.62bn



Source: Based on or includes research from Omdia, "Power Semiconductor Market Share Database 2018", September 2019.
Discrete Power MOSFET market incl. automotive MOSFETs. Power IC market incl. automotive power ICs.

Infineon and Spark Connected are joining forces to become the leader in notebook wireless charging solutions



- > full compatibility with current WPC Qi standard
- > used for smartphones, hearables, and other devices



- > high efficiency of up to 95%
- > enabling similar performance as wire-based charging
- > no temperature problems



- > turnkey reference design
- > incl. SW, HW, and design-in support enabling fast time-to-market



- > leading foreign object detection
- > enabling safe wireless power operation

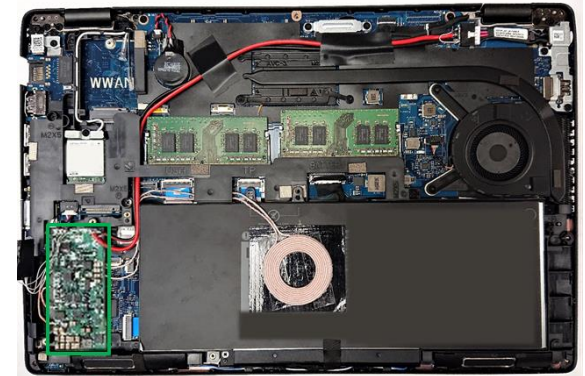
- > For “The Minotaur” 45 W wireless charging solution (transmitter and receiver), Infineon is providing MOSFETs, driver ICs, μ C, connectivity ICs, USB controller, and security ICs

Transmitter; in the charging pad (demonstration device)

Receiver; in the notebook (demonstration device)



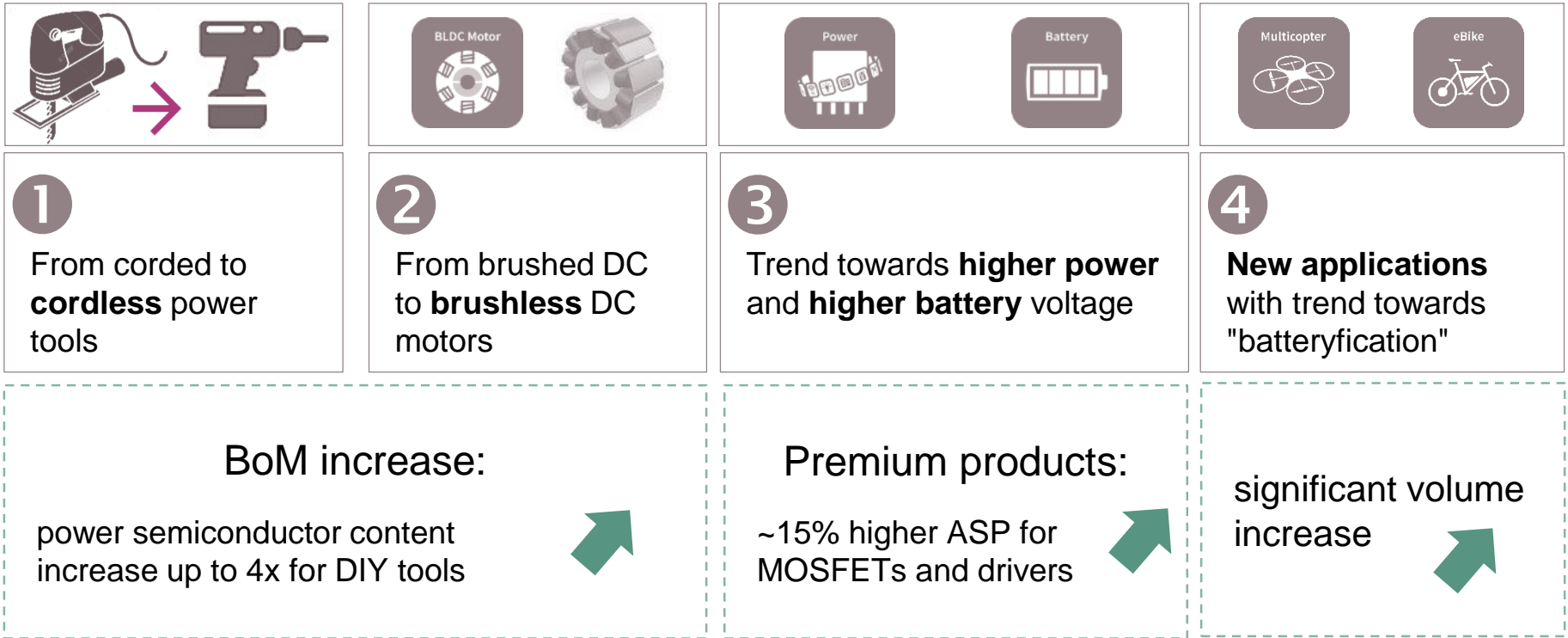
TX PCB



RX PCB

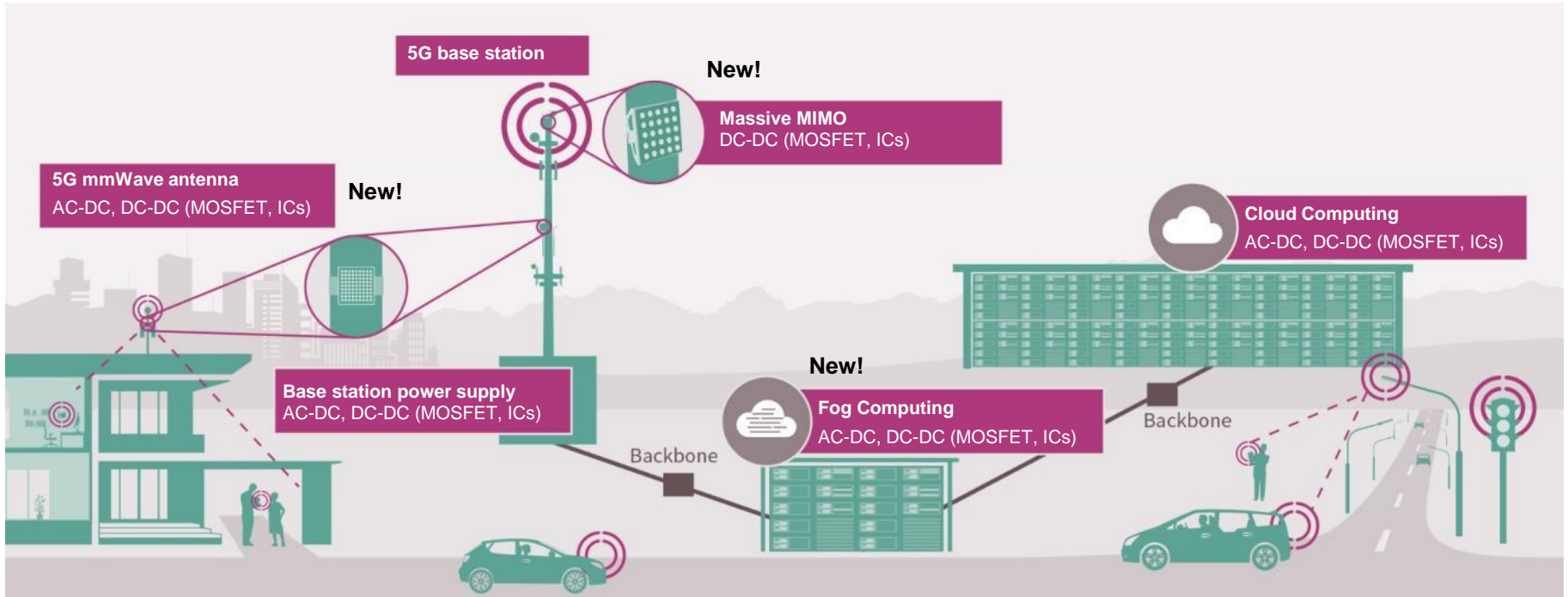
Four interrelated trends drive power semiconductor BoM in battery-powered applications

Interrelated trends for battery-powered applications



In total battery-powered applications are a significant growth driver for PSS' power business

Transition from 3G/4G to 5G drives demand in power semis for antennas and power supplies

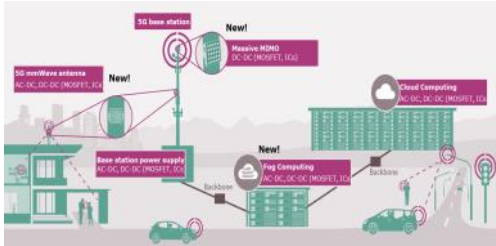


- > driver #1: massive growth of data and computing power
- > driver #2: higher number of base stations due to denser network
- > driver #3: ~4x higher power semiconductor content per radio board:
from ~\$25 for MIMO antenna to ~\$100 for massive MIMO antenna array
- > driver #4: fog computing data center as a completely new market

What comes next?

Mid- to long-term structural growth opportunities

Core



5G infrastructure



hyperscale AI data center



new material

Adjacent



Courtesy: Nissan

on-board charger



power tools



home appliances

New area



collaborative robots



smart speaker



class D audio



PSS – RF and Sensing



Main applications addressed by PSS sensors portfolio

MEMS microphone



Best audio performance

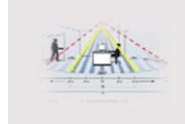


Low power consumption

3D radar (24/60 GHz)

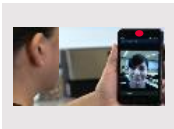


Ultra-low power consumption



Presence detection

3D ToF image sensor



Best price / performance



VR/AR, biometrics

Environmental



6x6 mm²

World's smallest form factor



Measure CO₂

Main applications

- › Smartphone
- › True wireless stereo earbuds
- › Smart speaker
- › Tablet

- › Automotive
- › Smart home
- › TV
- › Security camera
- › Smart building

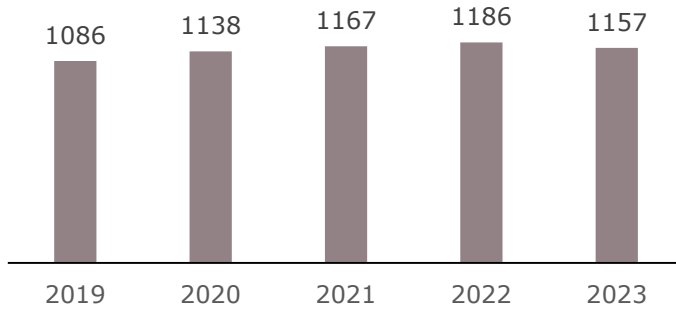
- › Smartphone: world-facing and user-facing
- › Robotics
- › Automotive in-cabin sensing
- › Payment terminals

- › Heating, ventilation, air conditioning (HVAC)
- › Air purifier
- › Smart thermostat

Sensor markets targeted by PSS

MEMS microphone market

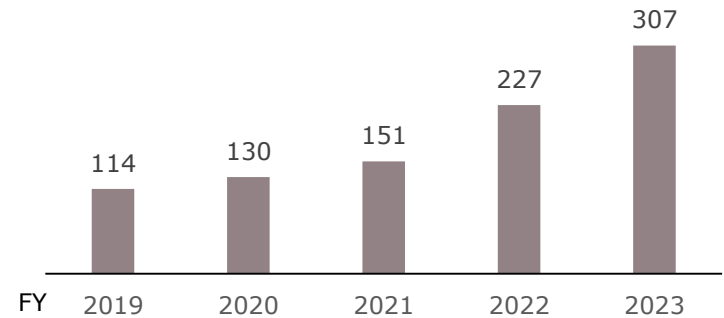
[US\$ m]



Source: Based on or includes research from Omdia, "MEMS Microphone Database 2019", January 2020

Radar IC market (24 GHz and 60 GHz only)

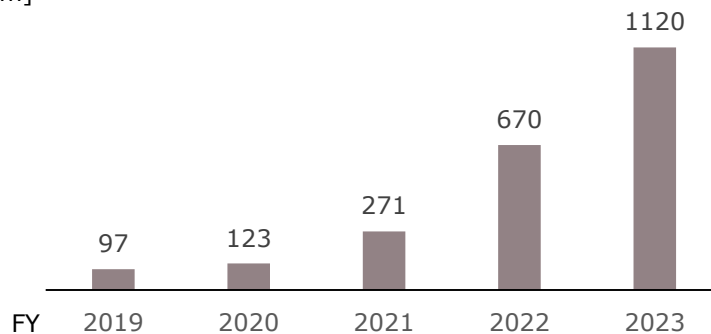
[EUR m]



Source: Infineon estimates

3D ToF image sensor market

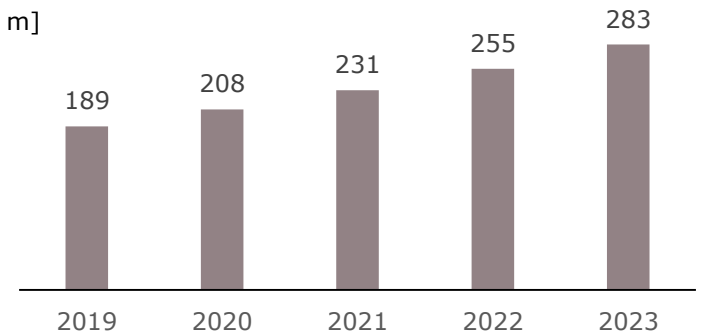
[EUR m]



Source: Infineon estimates

Environmental sensor market***

[US\$ m]



***Infineon is addressing gas sensors for HVAC, consumer, environment and air quality comfort for transportation only.

Source: Yole, "Gas and Particle Sensors Report 2018", December 2018

Different market dynamics of selected PSS sensors

MEMS microphone

- › Innovative products with best signal-to-noise ratio are very much valued by leading consumer electronic manufacturers. Outstanding audio experiences for active noise cancellation, transparent hearing and recording use cases.
- › New applications like true wireless stereo earbuds offer good growth opportunities.

Radar ICs (24 GHz and 60 GHz only)

- › Excellent market position with 24 GHz in automotive for blind spot detection.
- › New growth areas for 24 GHz and 60 GHz in consumer, IoT and industrial applications: advanced presence detection, people tracking and vital sensing.
- › Emerging market for in-cabin sensing.

3D ToF image sensor

- › With its XENSIV™ REAL3™ 3D ToF image sensors, Infineon serves the mobile device market since 2016. AR use cases expected to drive strong market growth from 2021 onwards.
- › Markets like robotics, in-cabin sensing and payment terminals offer additional potential.

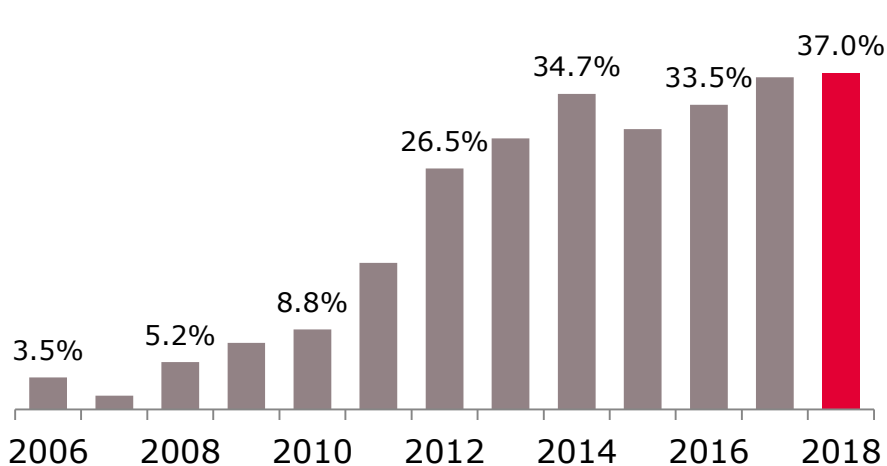
Environmental sensors

- › Market entry in CO₂ sensor market with first revenues expected in FY21.
- › XENSIV™ PAS CO₂ sensor meets the two key criteria small footprint and high performance in an affordable way. Hence the sensor is suitable to monitor air quality in a broad selection of everyday devices.

Sweeping success of our XENSIV™ MEMS microphones driven by unparalleled audio characteristics

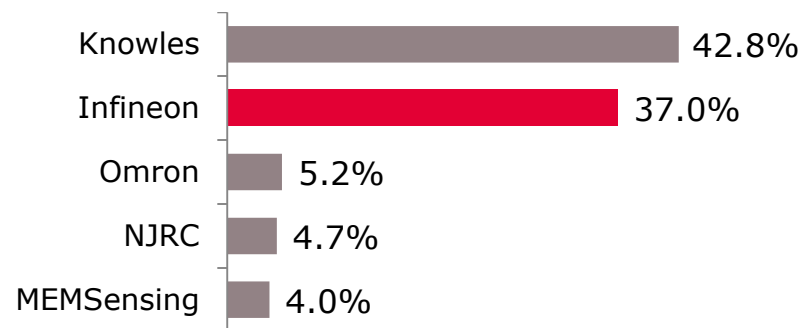


Infineon's market share development in MEMS microphones



2018 MEMS die market share

total market: 4.6bn units



Source: Based on or includes research from Omdia, "MEMS Microphone Database 2019", January 2020

Technological progression of Infineon XENSIV™ MEMS microphones

1 Single-back plate



SNR = 62 – 65 dB(A)

2 Dual-back plate



SNR = 65 – 69 dB(A)

2014

3 Sealed dual-membrane



SNR = 68 – 75 dB(A)
















2019



Connected Secure Systems



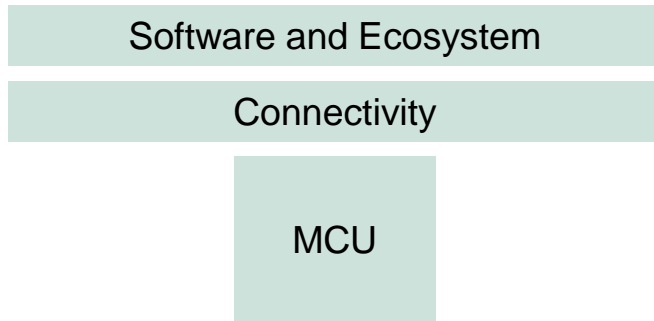
Short- to mid-term market outlook for CSS division's target applications

Application	Market Outlook for H2 CY20	Market Outlook for CY21
 Payment	 <ul style="list-style-type: none"> › Concerns related to COVID-19 lead to accelerated adoption of contactless payments worldwide 	 <ul style="list-style-type: none"> › Momentum in contactless payments expected to continue
 Identity	 <ul style="list-style-type: none"> › International travel restrictions due to COVID-19 affecting the issuance of passports and border control documents 	 <ul style="list-style-type: none"> › Prolonged restrictions on international travel expected to further negatively affect the issuance of passports
 Smart home, home appliances	 <ul style="list-style-type: none"> › Demand disrupted by COVID-19 mainly due to supply chain disruptions, lower consumer spending power, as well as the restrictions on installation services 	 <ul style="list-style-type: none"> › Return to growth, however, lower level than previously expected. › New features and technologies enter production and spread across models
 Gaming	 <ul style="list-style-type: none"> › Positive trend in gaming driven by COVID-19 lockdowns as need for indoor family entertainment increases 	 <ul style="list-style-type: none"> › Launch of new console models into the market expected to be offset by overall market saturation; Peak of demand driven by COVID-19 vanishes
 Wearables	 <ul style="list-style-type: none"> › Despite headwinds from COVID-19, global demand of smart watches still continues to grow driven by consumers' monitoring of health and fitness 	 <ul style="list-style-type: none"> › New product launches expected to further boost demand

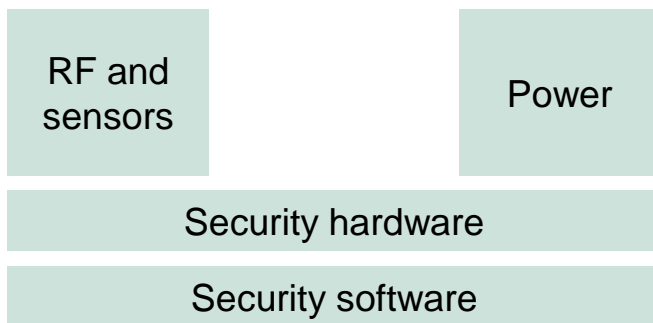
In IoT, the Cypress and Infineon portfolios complement each other for best-in-class solutions

Past: standalone IoT offerings from Infineon and Cypress

Cypress standalone offering:

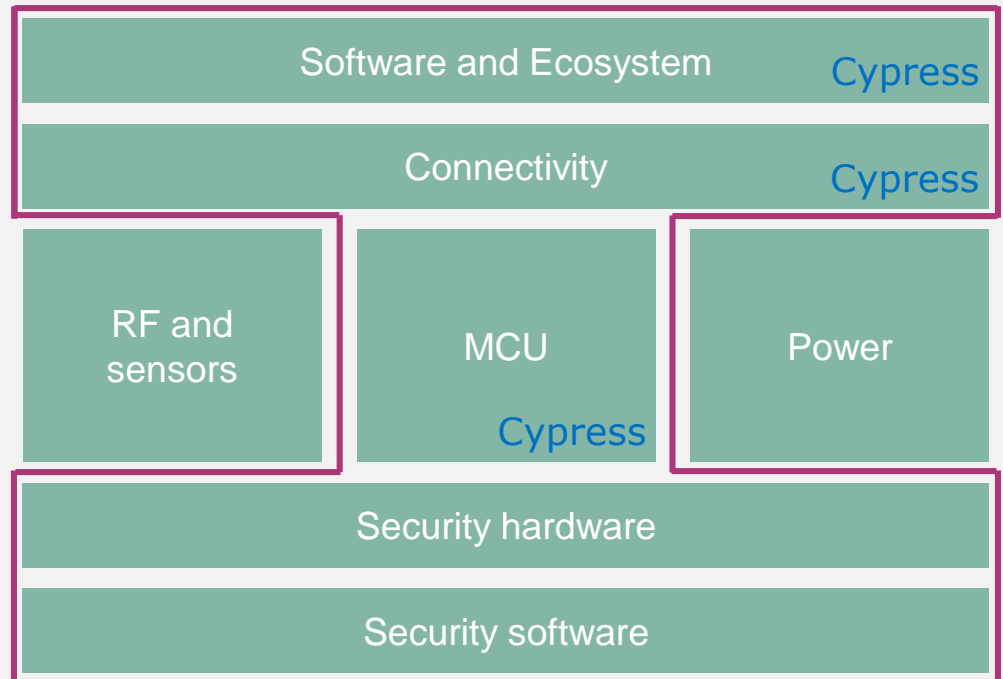



Infineon standalone offering:



Now: combined IoT offerings going forward

Best-in-class solutions - extending Infineon's scope of applications and markets and attracting new customers with new applications



 CSS offering

CSS has an industry-leading offering built on multi-year investments and experience



Microcontroller

- › 15+ years of investment in PSoC portfolio with > 2bn MCUs shipped
- › major advantages of programmability and low power consumption
- › integrated security as a key feature, especially for IoT



Connectivity

- › excellent market reputation; 1bn+ wireless nodes shipped
- › proven interoperability between Wi-Fi and BT/BLE as well as monolithic integration into MCUs
- › a leader in combos and software stack ⇒ key for IoT applications



Security

- › leading security market player; unrivaled in security and contactless competence
- › full solution offered with software – making security easy-to-implement, especially for IoT devices



Software

- › industry-leading software and toolbox: WICED, MODUS Toolbox
- › software as a key differentiator and a major enabler for fast and easy implementation of MCU, connectivity and security solutions in IoT devices



Ecosystem

- › established developer community for hardware and software
- › fast, proven technical support infrastructure

Infineon's system solutions are based on cross-divisional product offerings to max. BoM content

Example: smart watch



Processing

microcontroller



Memory

NOR Flash

F-RAM



Connectivity

Wi-Fi/Bluetooth combo IC

RF switches, low-noise amplifiers, antenna tuners



IoT platform

ecosystem, software, services



Human-machine interface

touch interface

voice user interface



Security

eSIM

secure element + NFC

cloud authentication



Device protection

ESD protection

battery authentication



Sensing

pressure sensor

radar IC

MEMS microphone



Wireless charging

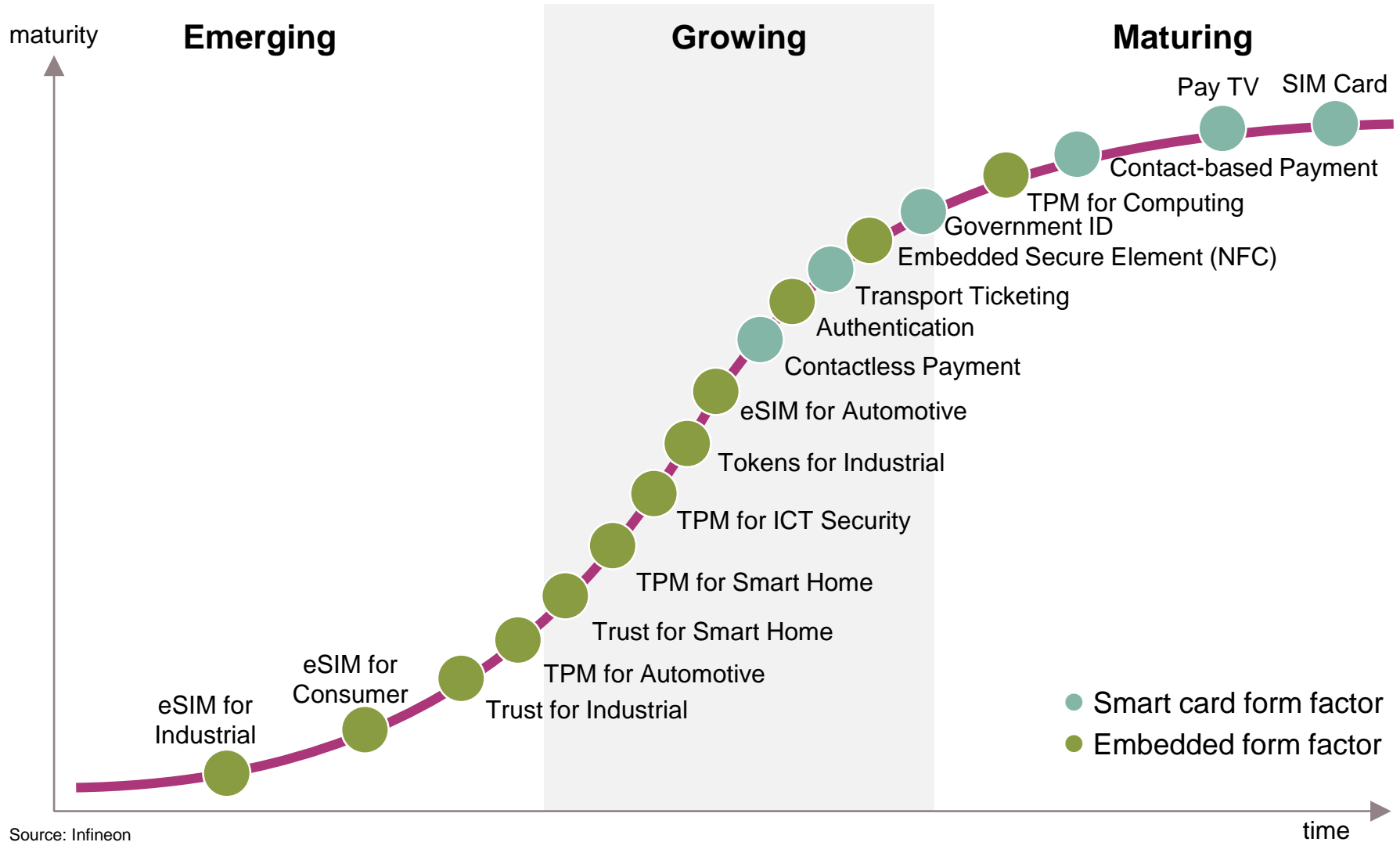
2 W inductive solution

2.5 W resonant solution



- CSS offering
- PSS offering
- ATV offering

Application pipeline continuously fueled by emerging topics



Source: Infineon

Agenda

1

First quarter Cypress being part of Infineon

2

ESG: targets and achievements

3

Automotive

4

Industrial Power Control

5

Power & Sensor Systems

6

Connected Secure Systems

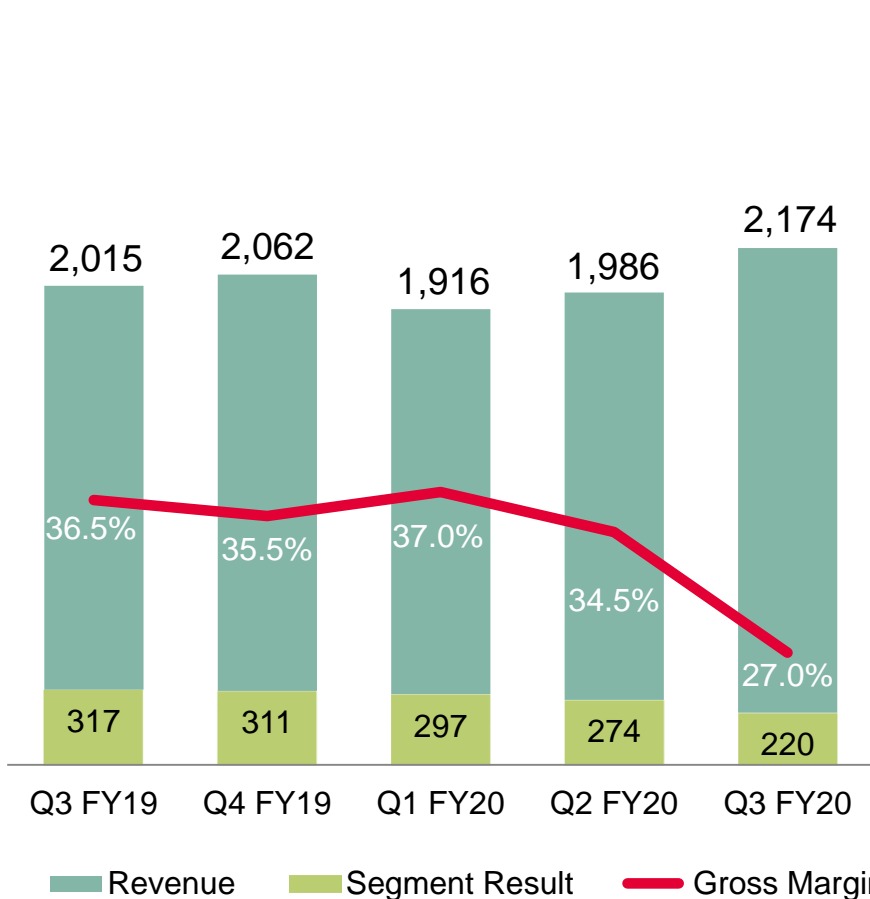
7

Selected financial figures

First time inclusion of Cypress revenues*

Revenue development

[EUR m]



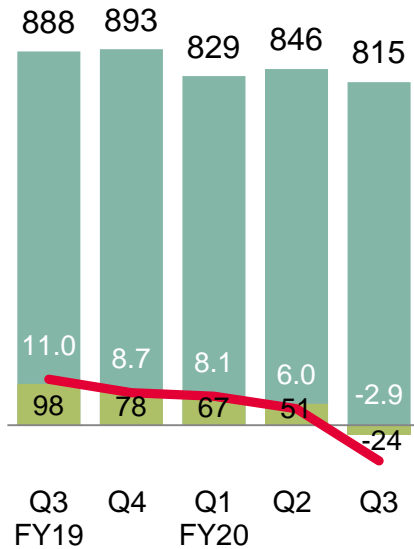
- > Cypress revenue contribution close to €400m
- > Revenue came in slightly better than expected
- > Robust profitability driven by slightly lower underutilization charges and cost containment

* Consolidation of Cypress revenue as of 16 April 2020.

Q3 FY20 division performance

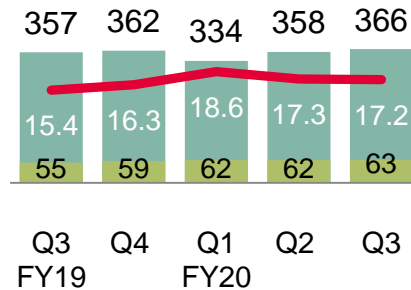
ATV

[EUR m]



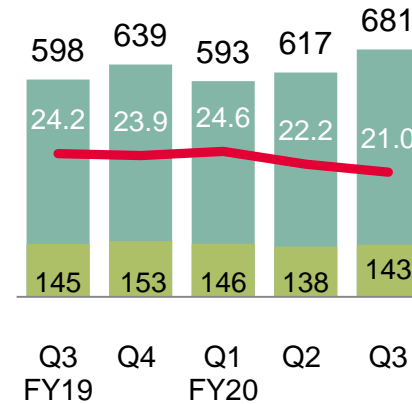
IPC

[EUR m]



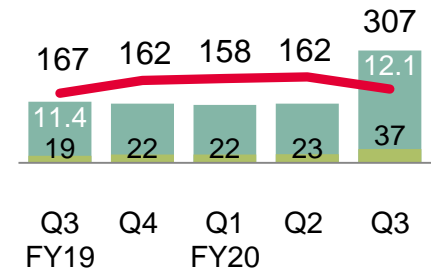
PSS

[EUR m]



CSS

[EUR m]



■ Revenue
 ■ Segment Result
 — Segment Result margin in %

› Q3 FY20: Nearly one fourth of revenue contributed by Cypress businesses of automotive microcontrollers and memory solutions

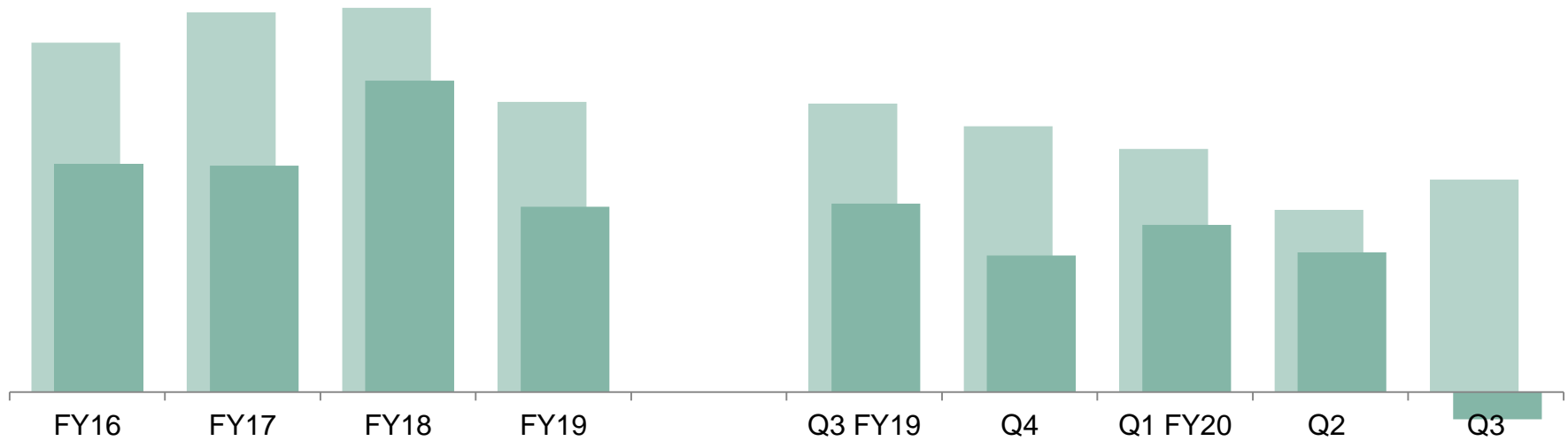
› Q3 FY20: Stable segment development on the back of a strong market position across a broad set of applications

› Q3 FY20: Less than one tenth of revenue was contributed by the former Cypress business of USB connectivity solutions

› Q3 FY20: One half of revenue coming from former Cypress general-purpose microcontrollers and wireless connectivity business

Adjusted RoCE above WACC

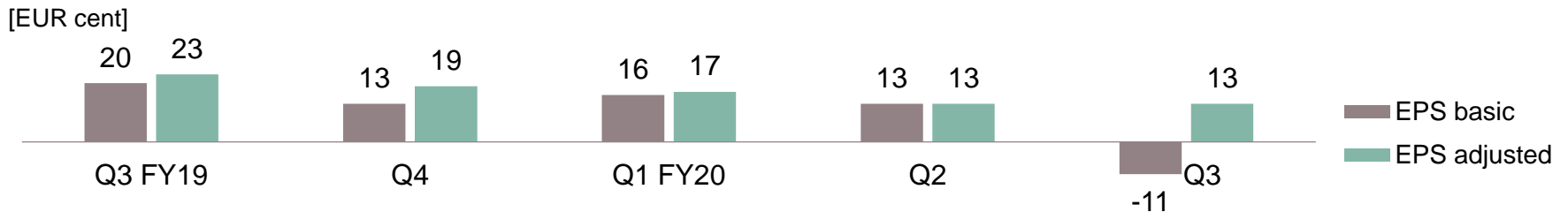
RoCE and adjusted RoCE



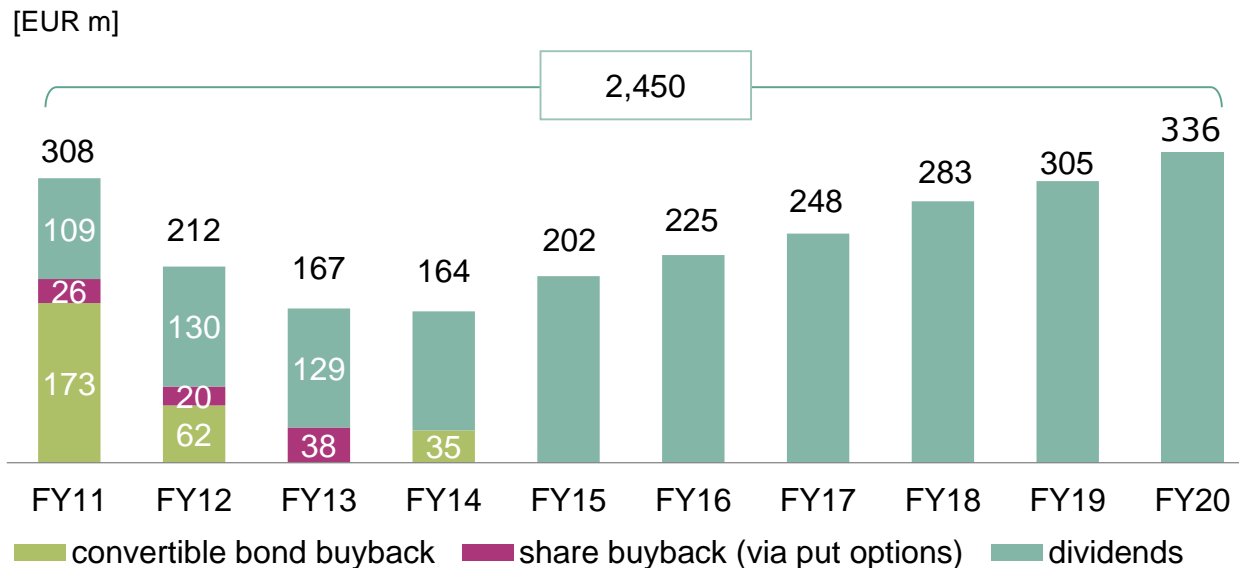
■ Adjusted RoCE (excl. effects from International Rectifier and Cypress acquisition, Deferred Tax Effects, RF Power sale) ■ RoCE

Earnings-per-share and total cash return

Development of earnings-per-share (EPS) from continuing operations



Total cash return to shareholders



- › Policy of sustainable dividend payout
- › Dividend for FY19: €0.27 per share
- › Dividend payout of €336m on 25 Feb 2020

Opex increase is almost entirely a result of the business combination



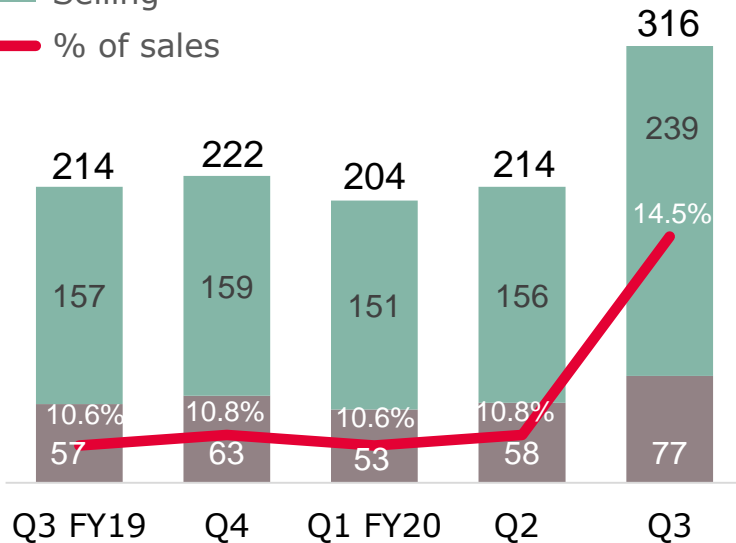
Selling, General & Administration

[EUR m]

General & Administration

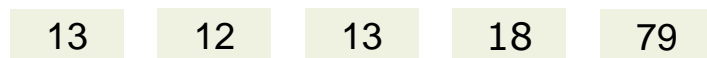
Selling

% of sales



Therein non-segment result charges

[EUR m]

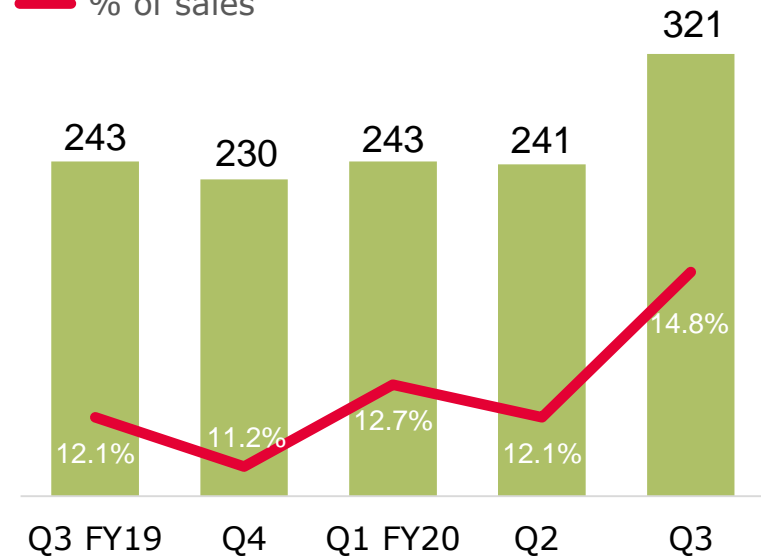


Research & Development*

[EUR m]

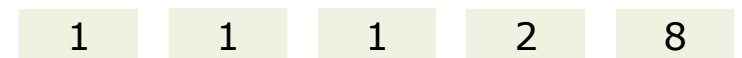
R&D

% of sales



Therein non-segment result charges

[EUR m]



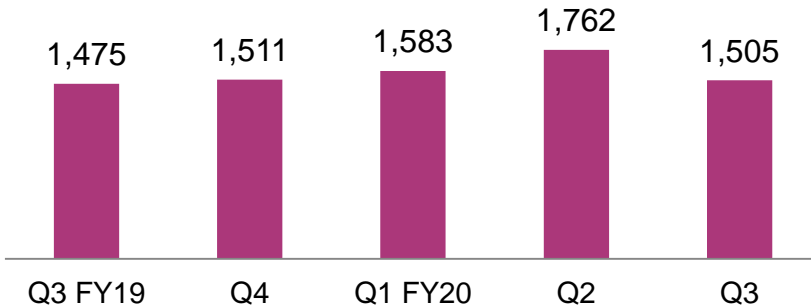
* In FY19, reported R&D expenses amounted to €945m, net of €111m of grants received and net of €125m of capitalized development costs.

Trade working capital components reflect consolidation of Cypress



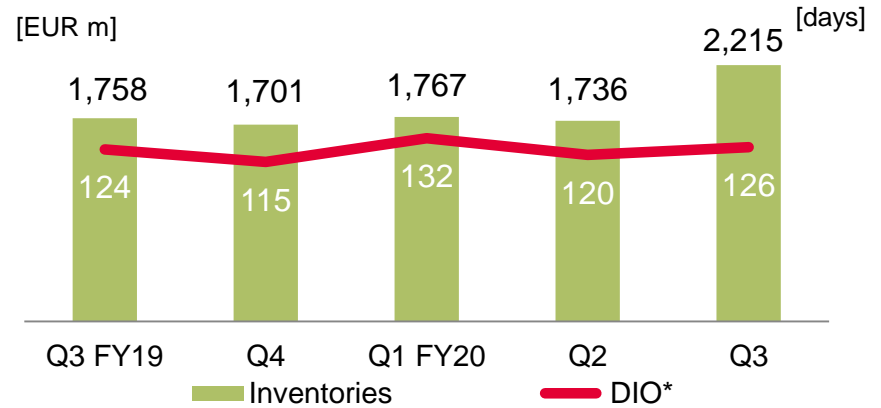
Working capital*

[EUR m]



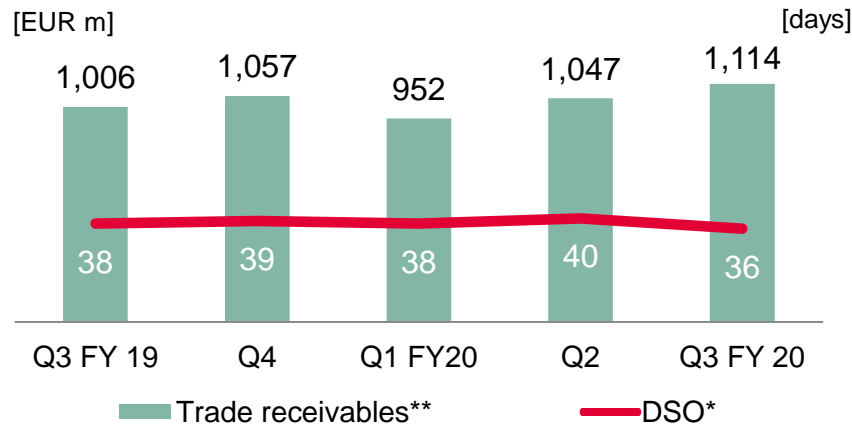
Inventories

[EUR m]



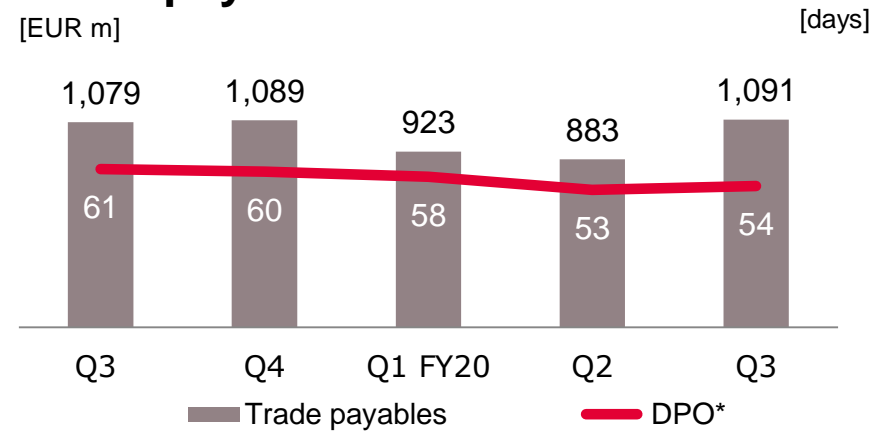
Trade receivables

[EUR m]



Trade payables

[EUR m]



* For definition please see page "Notes".

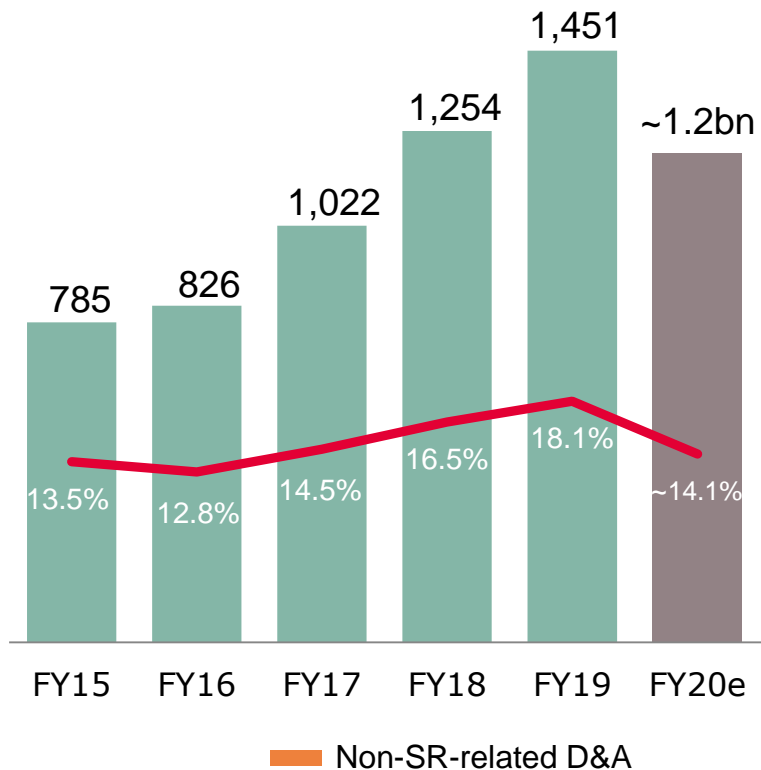
** Along with the integration of Cypress refund liabilities to customers are presented under "other current liabilities" instead of "trade receivables". Prior quarters' figures were adjusted accordingly for better comparability.

Cycle management slows down investments; D&A impacted by Cypress consolidation and PPA



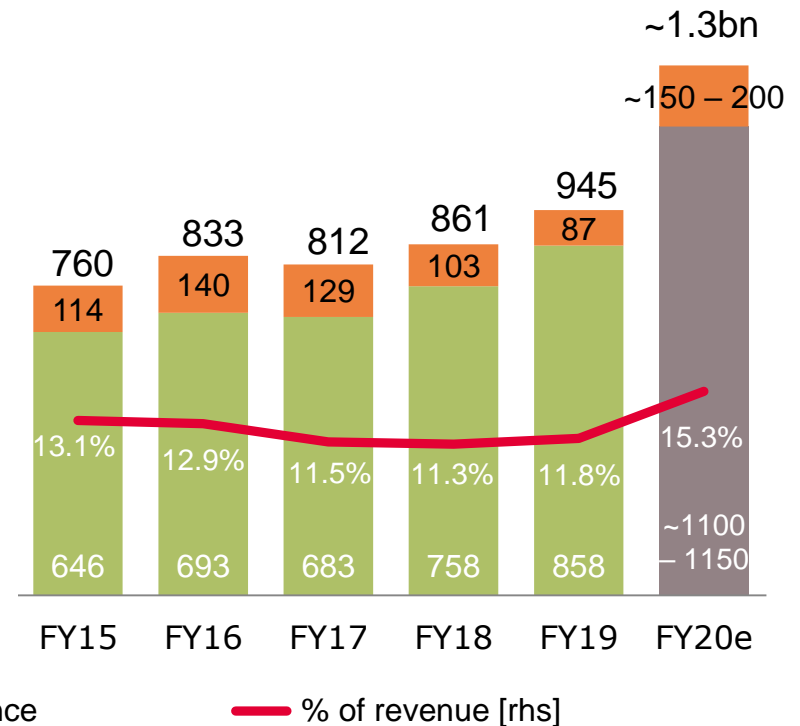
Investments*

[EUR m]



Depreciation & Amortization

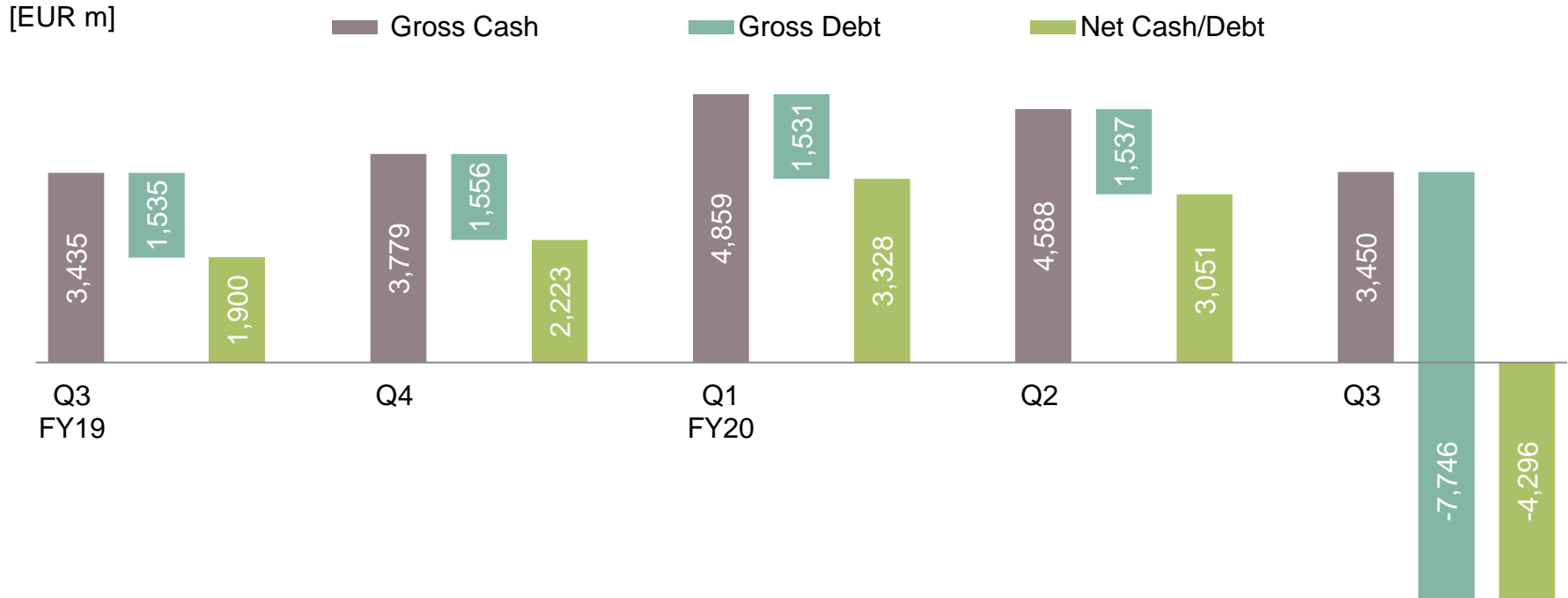
[EUR m]



* For definition please see page "Notes".

Financing of acquisition leading to net debt of €4.3bn

Liquidity development



- › Q1 FY20: Proceeds from €1.2bn dual-tranche hybrid bond booked on 1 Oct 2019
- › Q2 FY20: Dividend payout of €336m in February 2020
- › Q3 FY20: - closing of the acquisition of Cypress; entire acquisition financing facility drawn
 - raising €1.0bn via ABB and €2.9bn via bond issuance
 - repayment of the entire bridge facility; term loans remaining outstanding



Part of your life. Part of tomorrow.

Glossary (1 of 2)

ABB	accelerated book building
AC	alternating current
AC-DC	alternating current - direct current
AD	automated driving
ADAS	advanced driver assistance system
AEB	automatic emergency braking
AFS	advanced frontlight system
AI	artificial intelligence
AR	augmented reality
ASP	average selling price
BEV	battery electric vehicle
BGA	ball grid array
BLE	Bluetooth Low Energy
BoM	bill of material
BT	Bluetooth
CPU	central processing unit
CRC	cyclical redundancy check
DC	direct current
DC-DC	direct current - direct current
DIY	do it yourself
DPM	digital power management
eCall	emergency call
ECC	error correction code

ECU	electronic control unit
EPS	electric power steering
eSIM	embedded subscriber identity module
EV	electric vehicle
FHEV	full hybrid electric vehicle
FPGA	field programmable gate array
G2M	go-to-market
GaN	gallium nitride
GPS	global positioning system
GPU	graphics processing unit
HEV	mild and full hybrid electric vehicle
HMI	human machine interaction
HSM	hardware security module
HST	high-speed train
HVAC	heating, ventilation, air conditioning
HW	hardware
IC	integrated circuit
ICE	internal combustion engine
IGBT	insulated gate bipolar transistor
IoT	Internet of Things
IPM	intelligent power module
IVN	in-vehicle networking
iPol	image processing line

Glossary (2 of 2)

IRF	International Rectifier
IVN	in-vehicle networking
LCD	liquid crystal display
LDO	low dropout voltage regulator
LED	light-emitting diode
LSEV	low-speed electric vehicle
LSPS	LS Power Semitech Co. Ltd.
μC	microcontroller
Mb	megabit
MCU	microcontroller unit
MEMS	micro electro-mechanical systems
MHA	major home appliances
MHEV	mild hybrid electric vehicle
MIMO	multiple input, multiple output
micro-hybrid	vehicles using start-stop systems and limited recuperation
mild-hybrid	vehicles using start-stop systems, recuperation, DC-DC conversion, e-motor
MOSFET	metal-oxide silicon field-effect transistor
MPU	microprocessor unit
OBC	on-board charger
OEM	original equipment manufacturer
P2S	Infineon's strategic product-to-system approach
PAS	photoacoustic spectroscopy
PFC	power factor correction
PHEV	plug-in hybrid electric vehicle
PMIC	power management IC

Pol	point-of-load
PSoC	programmable system-on-chip
PV	photovoltaic
RF	radio frequency
rhs	right-hand scale
Si	silicon
SiC	silicon carbide
SiGe	silicon germanium
SMPS	switch-mode power supply
SNR	signal-to-noise ratio
SoC	system-on-chip
SOTA	software over-the-air
SPI	serial peripheral interface
SRAM	static random access memory
SW	software
TAM	total addressable memory
TCO	total cost of ownership
ToF	time-of-flight
TPM	trusted platform module
UPS	uninterruptible power supply
USB	universal serial bus
V2X	vehicle-to-everything communication
VR	virtual reality
VSD	variable speed drive
Wi-Fi	wireless fidelity
xEV	all degrees of vehicle electrification (EV, HEV, PHEV)

Disclaimer

Disclaimer

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Deutscher Zukunftspreis 2015, laureate Infineon, photographer Ansgar Pudenz, Hamburg (Germany).

Financial calendar

Date	Location	Event
19 Aug 2020	Baden-Baden → virtual	Lampe Bank German Conference
1 – 2 Sep 2020	Chicago → virtual	Jefferies Annual Semiconductor, IT Hardware & Communications Infrastructure Summit
2 Sep 2020	Japan → virtual	UBS Japan in Focus Conference
3 Sep 2020	London → virtual	dbAccess European TMT Conference
8 – 9 Sep 2020	New York → virtual	Citi 2020 Global Technology Virtual Conference
14 Sep 2020	San Francisco → virtual	DB Global Technology Conference
21 Sep 2020	Unterschleißheim (nearby Munich) → virtual	Berenberg Goldman Sachs German Corporate Conference
22 Sep 2020	Munich	Baader Investment Conference
5 – 6 Oct 2020	London → virtual	ATV Roadshow and Call
9 Nov 2020*		Q4 FY20 and FY 2020 Results
18 Nov 2020	Barcelona → virtual	Morgan Stanley TMT Conference
23 Nov 2020	Frankfurt	DZ Bank 11 th Equity Conference

* preliminary

ESG footnotes

- 1) This figure considers manufacturing, transportation, function cars, flights, materials, chemicals, water/waste water, direct emissions, energy consumption, waste, etc. and is based on internally collected data and externally available conversion factors. All data relate to the 2019 fiscal year. Manufacturing service providers are not included.
- 2) This figure is based on internally established criteria, which are explained in the explanatory notes. The figure relates to the calendar year 2018 and considers the following fields of application: automotive, LED, induction cookers, server, renewable energy (wind, photovoltaic), mobile phone chargers as well as drives. CO₂ savings are calculated on the basis of potential savings of technologies in which semiconductors are used. The CO₂ savings are allocated on the basis of Infineon market share, semiconductor content and lifetime of the technologies concerned, based on internal and external experts' estimations.
- 3) Calculation based on average polycrystalline photovoltaic cells and the average yearly solar radiation of central Germany.
- 4) Based on the average electricity consumption of private households in Germany and official energy conversion factors.
- 5) Calculation based on average passenger capacity and direct flight route using externally available data and conversion factors.

Notes

- Investments** = 'Purchase of property, plant and equipment' + 'Purchase of intangible assets and other assets' incl. capitalization of R&D expenses
- Capital Employed** = 'Total assets' – 'Cash and cash equivalents' – 'Financial investments' – 'Assets classified as held for sale – ('Total Current liabilities' – 'Short-term debt and current maturities of long-term debt' – 'Liabilities classified as held for sale')
- RoCE** = NOPAT / Capital Employed
= ('Income from continuing operations' – 'financial income' – 'financial expense') / Capital Employed
- Working Capital** = ('Total current assets' – 'Cash and cash equivalents' – 'Financial investment' – 'Assets classified as held for sale') – ('Total current liabilities' – 'Short term debt and current maturities of long-term debt' – 'Liabilities classified as held for sale')
- DIO (days inventory outstanding; quarter-to-date)** = ('Net Inventories' / 'Cost of goods sold') x 90
- DPO (days payables outstanding; quarter-to-date)** = ('Trade payables' / ['Cost of goods sold' + 'Purchase of property, plant and equipment']) x 90
- DSO (days sales outstanding; quarter-to-date)** = ('Trade receivables' / 'revenue')* x 90
- *without debtors with credit balances

Please note: All positions in ' ' refer to the respective accounting position and therefore should be applied with the positive or negative sign used in the relevant accounting table.

For further reading

IPC Business Update
Dr. Peter Wawer, Dr. Peter Friedrichs
7 May 2020



https://www.infineon.com/pcim_presentation

ATV Call
Peter Schiefer
8 October 2019



https://www.infineon.com/atv_call

Sustainability Report 2019
23 November 2019



https://www.infineon.com/sustainability_2019

IFX Day 2018
Capital Markets Day
London, 12 June 2018



https://www.infineon.com/ifxday_2018

Institutional Investor Relations contacts



Alexander Foltin

Corporate Vice President
Finance, Treasury & Investor Relations

+49 89 234-23766
alexander.foltin@infineon.com



Joachim Binder

Senior Director Investor Relations

+49 89 234-25649
joachim.binder@infineon.com



Isabell Diel

Manager Investor Relations

+49 89 234-38297
isabell.diel@infineon.com



Alexander Groschke

Senior Manager Investor Relations

+49 89 234-38348
alexander.groschke@infineon.com



Holger Schmidt

Senior Manager Investor Relations

+49 89 234-22332
holger.schmidt@infineon.com