Can I use any chip in my electronic Passport?

Nicolas Jaouen, Business Development Manager Government ID
ID4Africa 2019
Agenda

1. Infineon Corporate Presentation
2. Evolution of Border Control and Travel Document
3. The pillars of a chip
4. Wrap-up
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Infineon at a glance

Business Segments

- Digital Security Solutions (DSS)
- Power Management & Multi-market (PMM)
- Industrial Power Control (IPC)

Revenue FY 2018

43% Automotive (ATV)
31%
17%

Further information in the Annual Report 2018

Employees

- 40,100 employees worldwide (as of Sept. 2018)
  - Europe: 17,400
  - Americas: 3,900
  - Asia/Pacific: 18,800
- 35 R&D locations
- 17 manufacturing locations

Financials

- Revenue [EUR m]
  - FY 14: 4,320
  - FY 15: 5,795
  - FY 16: 6,473
  - FY 17: 7,063
  - FY 18: 7,599

- Segment Result [EUR m]
  - FY 14: 620
  - FY 15: 897
  - FY 16: 982
  - FY 17: 1,208
  - FY 18: 1,353

- Segment Result margin [%]
  - FY 14: 14.4%
  - FY 15: 15.5%
  - FY 16: 15.2%
  - FY 17: 17.1%
  - FY 18: 17.8%

Further information in the Annual Report 2018

Market Position

- Automotive
  - #2: Strategy Analytics, April 2019
- Power
  - #1: IHS Markit, Technology Group, September 2018
- Security ICs
  - #1: ABI Research, October 2018
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Border Control and Travel Document over time

50's

80's
Border Control and Travel Document over time
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Main Pillars for Chip Card Solutions

Interoperability and Robustness

Performance

Security
Is Standard Compliance sufficient?

IC needs to fulfill beyond ISO requirements
ICAO Interoperability Tests
High Performance with LDS 2.0

Visualization of read-out performance with and without VHBR

- LDS 1.7 20kByte 848kBit/s
- LDS 2.0 20kByte 3.4(6.8)MBit/s
- LDS 2.0 300kByte 848kBit/s

Values in seconds

- Code execution
- Contactless Transmission

LDS 2.0 min. 300kByte Data

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Security level based on document lifetime

- **Known Attacks**
  - Probing / Forcing
  - Re-Engineering
  - Side Channel
  - Fault Attacks
  - Brute force
  - PQC

Time
Common Criteria Certification & Conformity

- Most electronic documents are CC certified
- **Hardware:** always CC certified, usual EAL 6+
- **OS:** mostly certified, usual EAL 5+
- **Applets:** often CC certified, usual EAL 4+ / EAL 5+

- Conformity Test
- Silver Dataset
- 2006-2009 Timeframe
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### "Best in Class" requirements for contactless Chips in ePassports

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- **Facilitation / Traveler Throughput**
  - High Performance Controller
  - High Performance Transmission
  - Optimized antenna design for high transmission performance
- **Long Life Time Security**
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- **LDS 2.0 ready**
  - Sufficient non volatile memory
  - Advanced security for data storage
- **Durability**
  - Mechanical stability for a long life time
- **Cost**
  - State of the art technology node
Part of your life. Part of tomorrow.