IFX Day 2004

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Secure Mobile Solutions

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Never stop thinking.



Disclaimer

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Agenda

- SMS Overview
- **Mobile Solutions**
- Security
- Wireless Infrastructure



Secure Mobile Solutions: A streamlined, market-oriented organization

Mobile Solutions

Security

Wireless Infrastructure

Discrete Semiconductors

- Mobile platforms
- Baseband
- RF engines
- BAW filter
- Software solutions
- Bluetooth
- Local area wireless

- Chip card ICs
 - SIM cards
 - Banking
 - Pay-TV
 - Contactless
 - ID cards
- RFID tags
- TPM security

- Power amplifier
- Radio frequency ASIC's
- Baseband

- Transistors& diodes
- Tuners

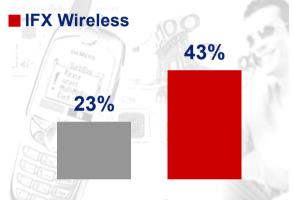
- Effective July 1, 2004, the Discrete Semiconductors business unit will be part of the Automotive & Industrial division.
- The BAW filter activities formerly part of the Discrete Semiconductors unit will be reported in the Mobile Solutions unit within SMS.



Infineon grows faster than the market

IFX Wireless

■ Wireless semiconductor market



Revenue growth CY03 vs. CY02

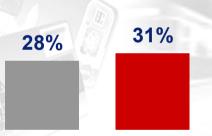
- Improved to No. 3 from No. 5 within one year
- Increased market share to 7.3%

Source: Gartner, June 2004

IFX Chip card

■ Chip card market

■ IFX Chip card



Revenue growth CY03 vs. CY02

- Clear No. 1; IFX as large as next three competitors combined
- Increased market share to 41.2%

Source: Gartner, April 2004

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Agenda

- SN
 - **SMS Overview**

Mobile Solutions

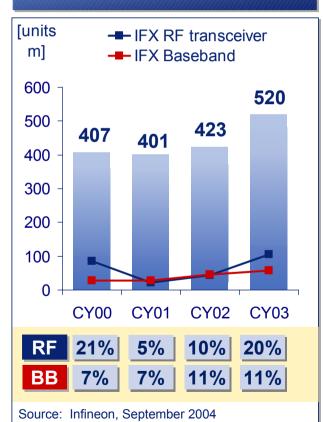
Security

Wireless Infrastructure

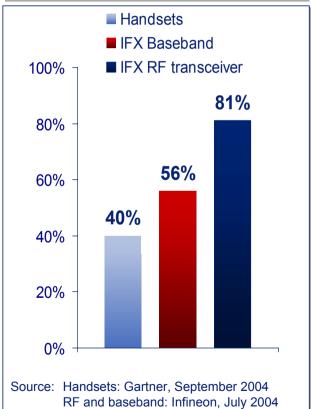


Continued to gain market share in RF and baseband

Total handset market CY00 to CY03



Unit growth 1H CY04 vs. 1H CY03





Offering a diverse RF transceiver portfolio

W-CDMA

- World's first single-chip W-CDMA transceiver
- Shipping to 4 of 5 Japanese 3G OEMs

GSM/EDGE

■ First proven EDGE RF transceiver solution in high-volume production

GSM/GPRS

 World's first single-chip GSM/GPRS CMOS transceiver in high-volume production

RF CMOS Technology Introducing RF CMOS as mainstream technology for all RF transceivers





Infineon's RF sub-system evolution: 69% board-size reduction and 87% component count decrease

1999	2000	2002	1H'04	2H'04
1 st Generation	2 nd Generation	3 rd Generation	1 st RF CMOS Generation	2 nd RF CMOS Generation
3 0896 M7.486 E274				
Board-size: 770mm²	650mm²	500mm²	290mm²	238mm²
Component count: 150	95	90	70	20



Introducing RF CMOS as mainstream technology for all RF transceivers

RF CMOS benefits:

- Efficient and simple digital circuitry
- Takes advantage of CMOS shrink potential
- Enables RF/Baseband integration roadmap
- Synergies with mainstream production technologies

Customer benefits:

- Reduced power consumption
- BOM savings
- LOM savings
- Fastest time to market
- Increased manufacturing flexibility



Next step: Monolithic integration

2004

2005

RF CMOS transceiver:

- Volume production
- 130nm CMOS
- Single-chip digital RF solution

Baseband:

- Volume production
- 130nm CMOS
- Integrates:
 - Digital baseband
 - Mixed signal
 - SRAM

Customer benefits:

- Lower system cost
- Smaller PCB area
- Less complexity

Single-chip: RF and baseband



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Covering standard features of multimedia handsets with new application-enhanced baseband family

Features of a **fraction** of multimedia phones

Multimedia Companion IC

- HW graphic support
- ≥ QCIF video
- Camera connection
- Graphic display interface

GSM/GPRS Multimedia Baseband "S-GOLDlite"

Standard features of multimedia phones

- Color display IF
- SW for low resolution video
- SW for graphics

ARM9 single modem and application processor

Multimedia Companion IC

- > 2-Megapixel camera
- H.264 video support
- CIF video codec
- HW graphic support
- 3D audio

EDGE Multimedia Baseband "S-GOLD2"

- 2-Megapixel camera IF
- Graphic display support
- QCIF video support
- SW for graphics

ARM9 single modem and application processor "Move" co-processor for MPEG4 encoding

2004

2005

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Infineon wireless product and service offering

Design and consulting center

Mobile phone platform package

Chipset



Customer

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Customized solutions with semiconductors from Infineon

Solution design and software for 2G, 2.5G and 3G Connectivity Bluetooth[™] ICs **PCB** Reference Design (Fully **RF Section & Power Amplifier** RF ICs = Type Approved) Power Amp ICs = **Baseband Power Management ICs** Baseband ICs • Software-Software **Expertise Protocol Software Application Software** Authentication SIM Security **Discretes Expertise Silicon Discretes Storage Memory** MOBILERAM CellularRAM Sensors **Cover detection**

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■ Providing up to 80% of silicon content in mobile phones.



MP1: World's first UMTS, EDGE and GPRS mobile phone solution utilizing an ARM9-based modem



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Christmas suggestions: Selection of phones using IFX solutions

























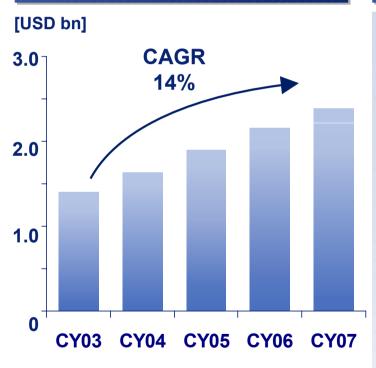
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Smart card ICs: Strong growth potential

Smart card IC market revenue development



Key market drivers

■ Mobile communication

- High-end SIM ICs
- Subscriber growth

■ Government ID projects

- Passports
- National ID
- Healthcare cards

■ Contactless technology

- Secure travel documents

■ Banking

- EMV migration push

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Source: Frost & Sullivan 2004



Well positioned to serve the key growth markets

Contactbased chip cards Contactless chip cards, RFID

Security ICs



Communications
Prepaid
Mobile







Payment
Credit/Debit, e-purse
Transport, ticketing







Identification ePassport, nat. ID, social, access, RFID, e-Government









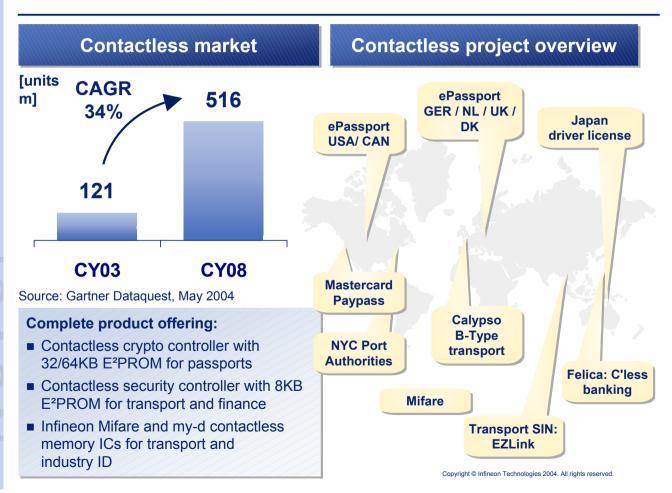
EntertainmentPay TV, gaming, video/audio







Significant growth potential from a rapidly growing contactless market through a complete product portfolio





Sesames award for face-to-face technology

Face-to-face technology benefits

Cost benefits

- Replacement of expensive embedded technologies
- Yield optimization thanks to separate module tests
- 3D integration helps overcoming wiring crises

F2F metal layer (Cu) Bottom chip Bond pad Isolation layer (Passivation)

Feature benefit

- Enables higher memory capacity
- Modularity
- Use of different technologies (e.g. logic CMOS, Flash, FeRam, MRAM, ...)
- Enhanced security for chip cards (less up side area exposed, separation leads to destruction)
- Gain of additional die size

Time to market benefits

Reduced time to market thanks to technology re-use



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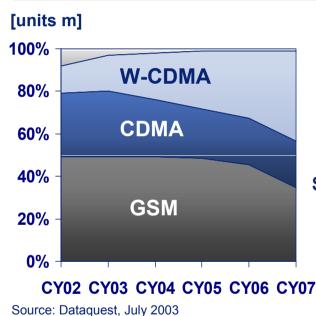
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Infineon's focus is on 3G

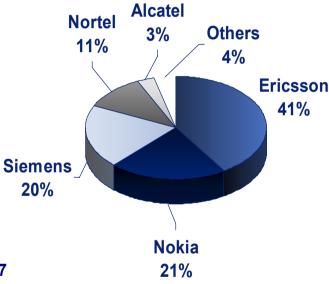
Capex growth by air interface

W-CDMA infrastructure market



■ W-CDMA is expected to be

the fastest-growing segment



Source: IMS, May 2004

More than 80% of the W-CDMA opportunity is with the top 3 OEMs

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Infineon is well positioned to take advantage of growing 3G infrastructure market

- Supplier to the top 3 wireless infrastructure OEMs
- Core supplier in RF ASIC / modules and RF-power for the base station market leader
- No. 2 in RF-power with fast-growing market share
- RF-power products for all 3G bands
- GOLDMOS technology for RF-power transistors offering market-leading performance
- Broadening 3G portfolio with RF ASSPs and baseband





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