



We are the link
between the real and
the digital world.

Bring your smartwatch and wristband device to the next level and experience SECORA™ Connect for smart payment, access and ticketing

Infineon's virtual show 2020



Worldwide wearable and healthtech sales will grow rapidly over the next years – Lifestyle, wellbeing and health as key drivers



GLOBAL WEARABLE DEVICE UNIT SHIPMENTS

2020 to 2025: 216 mn to 347 mn

COVID-19 IMPACT:

- › Overall wearable shipments will decline in Q2 but will see a rebound in Q3/Q4
- › Personal healthcare has become much more important as before
- › Key areas of growth:
 - prediction / prevention
 - health monitoring
 - contact tracing
 - social distance enforcement

MEDICAL WEARABLES MARKET

2020 to 2025: 7.4 bn USD to 19.5 bn USD

Key market trends wearables and healthtech

Key market trends and drivers



Sensor accuracy

especially in low cost wearables an increase will happen by 30%



Diversification of wearables

beyond just smart watches and fitness trackers



Extension of battery lifetime

(energy harvesting & wireless charging)

Data security and privacy

especially important for health-related use cases



Advanced health monitoring

(cardiac condition, blood pressure, blood glucose)



Fuse between health and consumer:

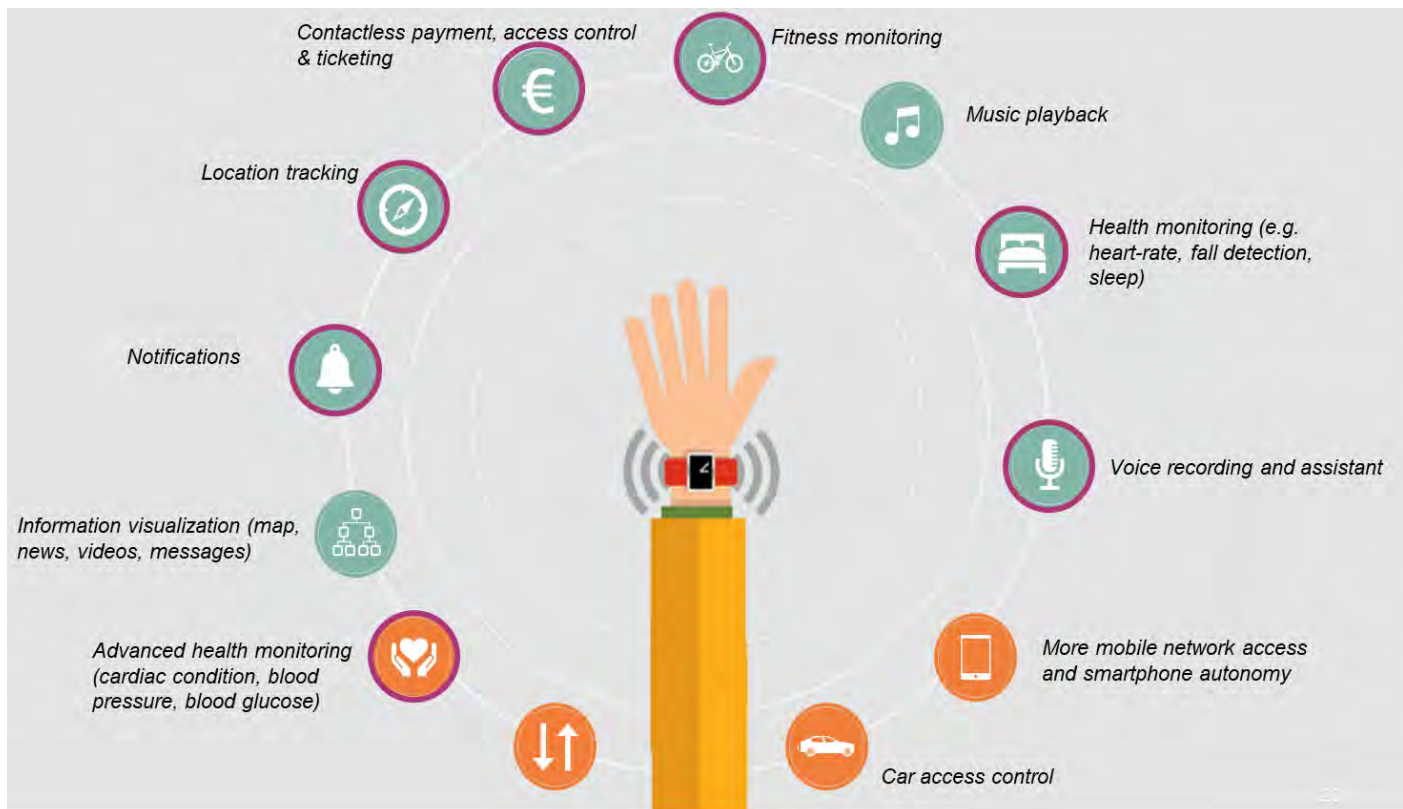
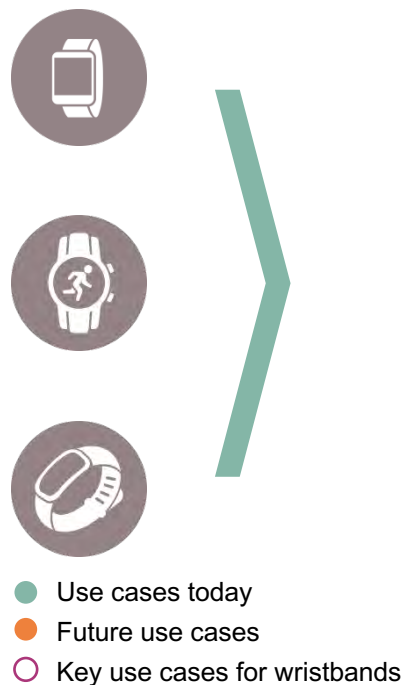
prediction, prevention, contact tracing, social distance enforcement, 24/7 health monitoring



Lifestyle, wellbeing and health – key areas for using smartwatch, sports watch and wristbands



Dominating use cases for smartwatch, sports watch & wristband



Infineon – the right partner to solve your smartwatch, sports swatch or wristband design challenges



Key challenges customer face ...

Precise and robust measurement



Experience accurate single step or body motion detection, accurate altitude measurement, fall detection or location tracking even in harsh environments.

Easy and secure data transmission



Easy implementation of smart payment, ticketing or access control with Infineon's NFC solution

Easy to integrate solutions



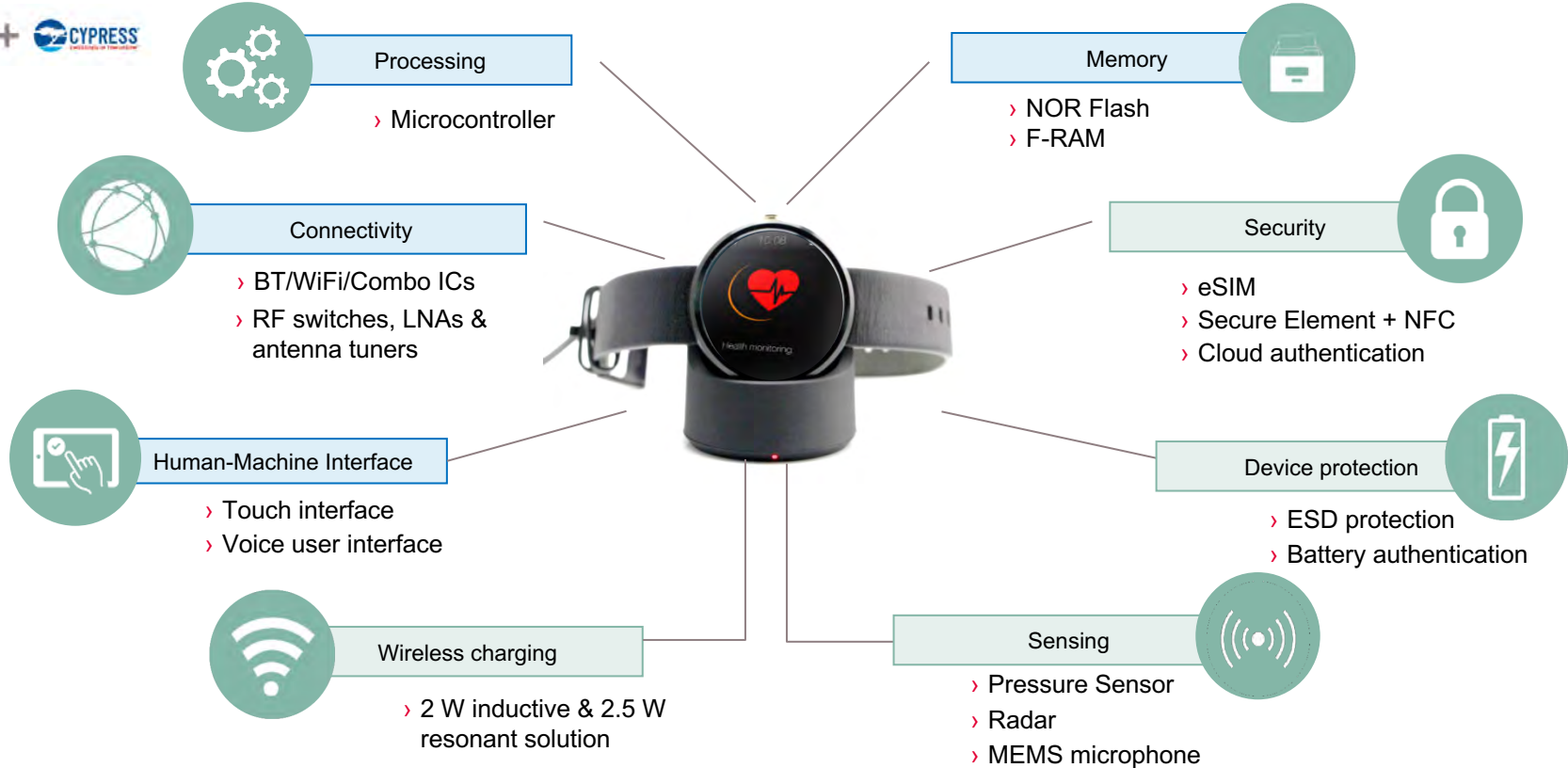
Decrease your time to market. Thanks to our broad product portfolio and solution offerings such as wireless charging, eSim, ESD protection or authentication

Long-lasting battery life-time

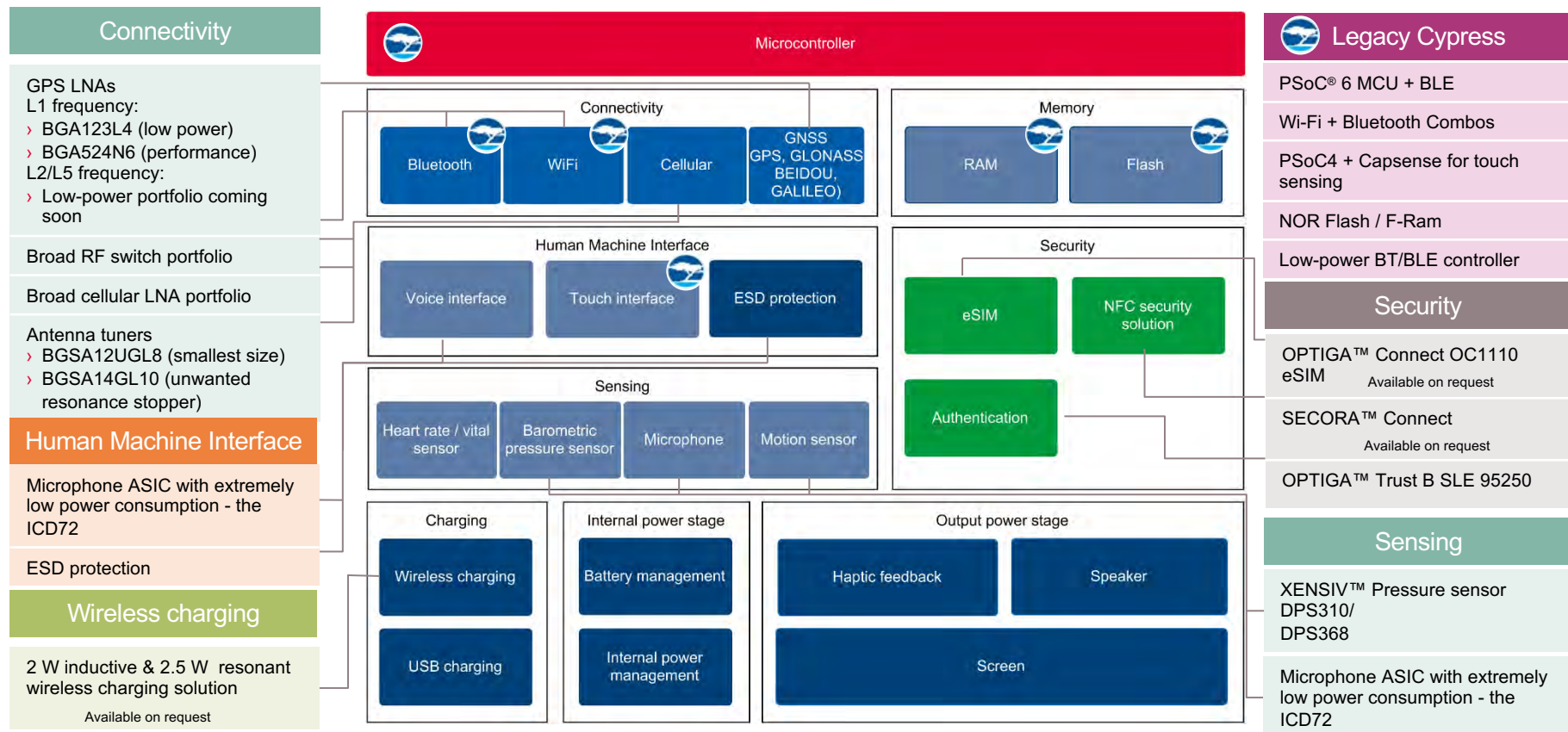


Products with low energy consumptions and smallest form factors ensure increasing battery life and high functional integration.

...a one-stop-shop with excellent RF, sensor, connectivity, power, memory and security solutions



Infineon offerings for smartwatches or wristbands



Infineon value proposition for smartwatch / sports watch / wristband: Leading technologies will bring differentiation



Robust & highly accurate altitude measurement



Detection of **single steps**, body **motions & fall event**



Highest accuracy and fast signal pick-up for **location tracking**



Device **protection** to ensure **high quality** user experience



High reliability and data through-put WiFi/BT connectivity



Low power consumption to increase battery life



Secure **cellular network connection**



Small form factor for high functional integration



Easy, convenient and **secure** data transmission by NFC



Integrated lowest power compute, BLE connectivity & touch control

A close-up photograph of a person's hand wearing a white smartwatch. The watch face is lit up and displays various colorful app icons. The background is a soft-focus grey.

Easy, convenient and safe data transmission



NFC solution

NFC payment is becoming a standard feature in smartwatches

Use cases



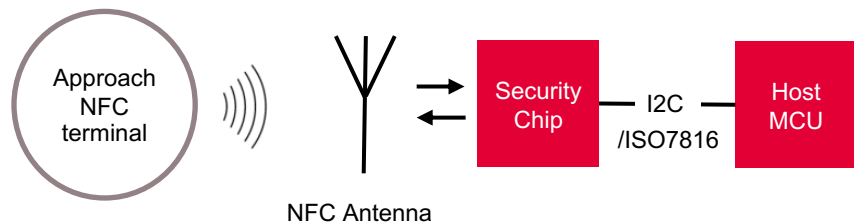
Payment



Access control



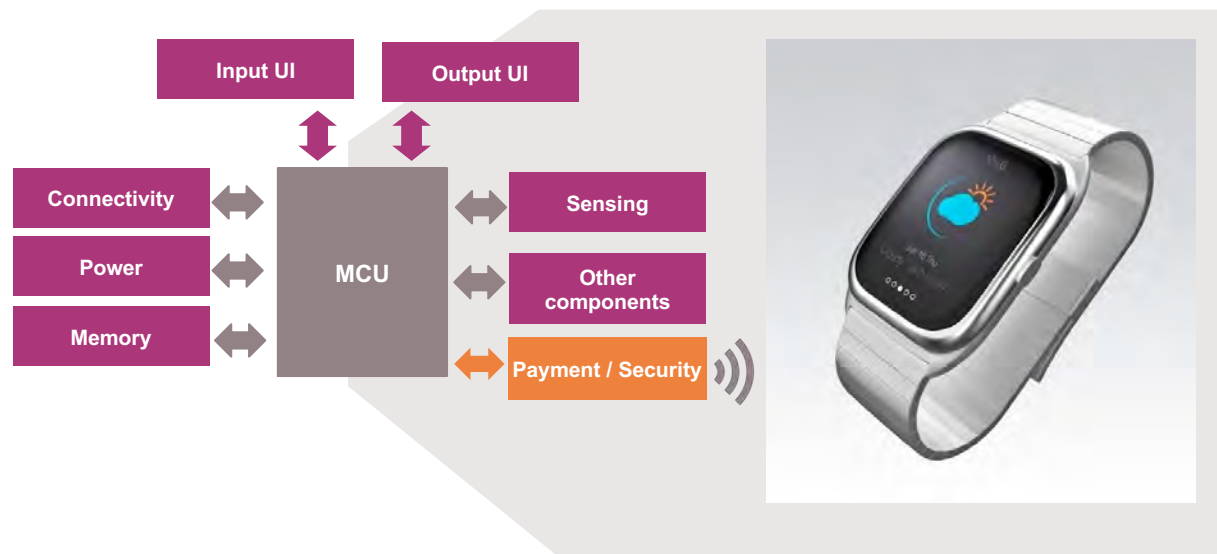
Ticketing



- › Mobile payment is becoming ubiquitously available and gaining traction in wearables
- › Realized through NFC security chip and ISO14443 interface
- › Security chip enables creation of cryptograms for every transaction to secure transactions and data

Key challenges for smart wearables and IoT devices

Hardware and system design challenges and key requirements



Challenge 1:
Very Low Power Consumption

Challenge 2:
Ultra-Small Physical Dimension

Challenge 3:
Security & Contactless Performance

Challenge 4:
Service enrollment

SECORA™ Connect enables NFC security use-cases such as payment and beyond



SECORA™ Connect

- › Optimized architecture for smart wearables & IoT devices
- › Enables NFC security use-cases such as payment, transport, access and beyond



Turnkey NFC



Ready-2-Go
security



Low power
consumption to
increase battery life



Improve
Energy Efficiency



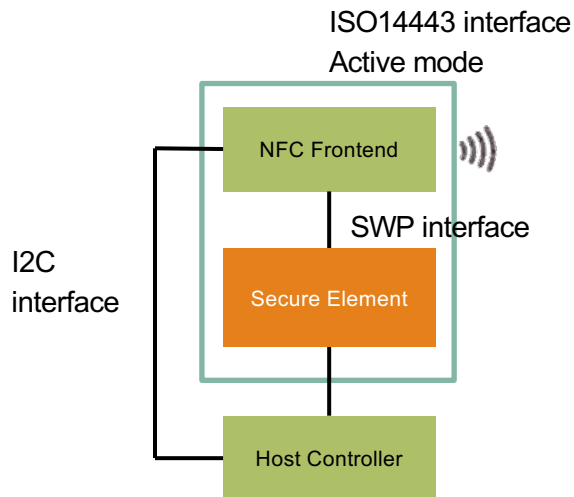
Small form factor
for high functional
integration



Address smaller form
factors

System Overview of Secure Element and NFC Security Controller in Smart Devices

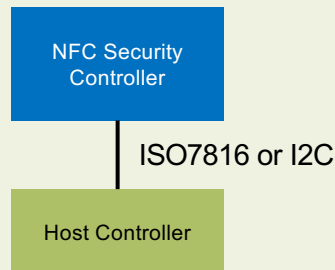
Conventional solution



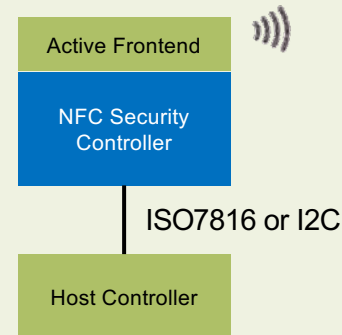
System mainly for Smart phone
Not power and cost optimized for low
Power connected devices

SECORA™ Connect

ISO14443 interface
Passive mode



ISO14443 interface
Active mode



Optimized system architecture for
Low power connected devices

SECORA™ Connect boosted

Highlights and benefits



Standby Power consumption

Boosted solution
12-15 μA and down to
4 μA with new boosted
MCP available end 2020

Passive solution
No power consumption

Conventional solution
Between 20-50 μA ,
depending on the
NFC nodes

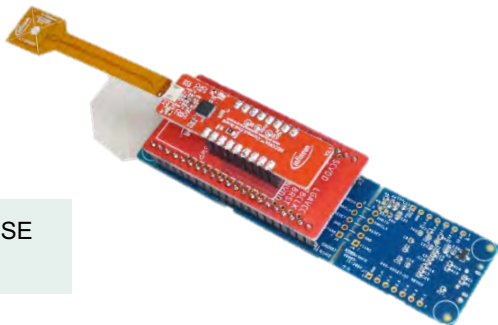
Seamless migration and support package

New design-in package v2.0

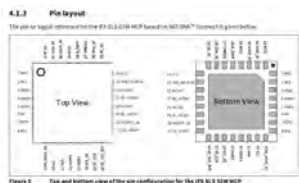
SECORA Connect Evaluation Kit v2.0

Shield2Go SECORA™ Connect Evaluation Board

- ✓ Remote management of SE
- ✓ NFC capabilities



Documentation & white-paper available



DSEI: Decentralized SE Management

Abstract: This paper describes the design and implementation of a decentralized security management system (DSEI) for a secure element (SE) in a mobile device. The system is designed to manage the SE's security state, including key generation, distribution, and revocation, in a decentralized manner. The system is implemented on a PSoC 6 BLE WICP and is designed to be compatible with the Android™ OS.

Figure 6: Top and bottom view of the pin configuration for the PSoC 6 BLE WICP.

Cypress PSoC® 6 BLE Prototyping Kit as host platform
to handle the BLE connection to Android™ App



- ✓ Host MCU SW stack which handles I²C communication to SECORA™ Connect and BLE comm. to the mobile device as ready to go plugin inside PSoC Creator and Modus Toolbox

Technical experts and support



- › Host Integration
- › Antenna design
- › Certification

G2M support material



Download our
[Application brief](#)



Learn more on our webpage
www.infineon.com/wearables



Introduction to Wearables and Healthtech
(5min video) available on
www.infineon.com/wearables



Part of your life. Part of tomorrow.