Take your wrist-worn device to the next level with Infineon’s sensing, RF, power and security solutions

**Smartwatch** is a wrist-worn device that provides a two-way connection via Bluetooth, cellular baseband or Wi-Fi to a smartphone. It receives electronic communications like texts or voice calls, and must display the time and have a glanceable display. These lifestyle devices monitor health and make communication (text, calls) more convenient. They can include a smartwatch from all generations/versions and sports watches.

**Wristband** or a wrist-worn device offers limited functionalities. Compared to a smartwatch, it just covers a selected amount of use cases (e.g. step counting, sleep monitoring, location tracking, access control). The category “wristband” includes devices such as fitness and activity trackers, or health care monitor watches for elderly people.

Infineon and its product portfolio solve design challenges such as data security, sensor accuracy, longer battery lifetime, small form factor of the components, device protection and differentiation between everyday movements and a fall event. Infineon can support customers to develop high efficient, safe and innovative new solutions by addressing use cases such as smart payment and ticketing, notifications and voice calls, smart access and wireless charging.

Choose Infineon to solve your application requirements

- Increased battery lifetime
- Enhanced productivity
- Optimized security solutions based on detailed system understanding with easy integration
- Secure, protected and safe battery authentication
- Reduced system size and cost
- Quality and technology leadership
- One-stop-shop
- Fast time to market with best-in-class support

Main use cases for smartwatch, sports watch and wristbands

- Location tracking
- NFC payment, access and ticketing
- Device protection for seamless user experience
- Notifications and voice calls
- Health monitoring (fall detection)
- Fitness monitoring
Smartwatch, sports watch and wristband

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**Connectivity**
- Broad RF switch portfolio
- L1 frequency BGA123L4 (low power)
- L2/L5 frequency portfolio available
- Broad cellular LNA portfolio
- RF switch for antenna switching between Wi-Fi and Bluetooth
- GNSS LNA for location tracking, activity tracking

**Storage**
- SFM3204A Low-power 32 Mbit flash storage

**Interface and power**
- TVS diodes
- ESD protection

**Security**
- NC1025 eSim for cellular connectivity, notifications, voice calls and emergency alert (available on demand)
- SECORA® Connect NFC solution for payment, ticketing and access (available on demand)
- OPTIGA™ Trust B SLE 95250 Hardware-based security solution for battery protection

**Connectivity**
- BT/Wi-Fi
- Cellular
- GNSS (GPS, GLONASS, Beidou, Galileo)

**Memory**
- RAM
- Flash

**Interface**
- Microphone
- Touch interface
- ESD protection

**Security**
- eSim
- Secure element + NFC

**Sensing**
- Vital sensing
- Environmental sensing
- Sports/Activity sensing
- Authentication

**Charging**
- Wireless charging
- USB charging

**Internal power stage**
- Battery management
- Internal power management

**Output power stage**
- Haptic feedback
- Speaker
- Screen

**Input UI**
- MEMS microphone (more details coming soon)
- Voice recording, voice assistant and mobile communication

**Wireless charging**
- 2 W inductive and 2.5 W resonant
- Wireless charging solutions (available on demand)

**Sensing**
- Pressure sensor for altimeter, location tracking, activity tracking, fall detection

**Microcontroller**
- BT/Wi-Fi
- Cellular
- GNSS (GPS, GLONASS, Beidou, Galileo)
- RAM
- Flash
- Microphone
- Touch interface
- ESD protection
- eSim
- Secure element + NFC
- Vital sensing
- Environmental sensing
- Sports/Activity sensing
- Authentication
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- Pressure sensor for altimeter, location tracking, activity tracking, fall detection
Infineon – the right partner to choose for your wearable device

- **Easy & convenient**
  - NFC security transactions

- **Robust & highly accurate**
  - Detection of single steps, body motions detection & fall event

- **Detection of single steps, body motions detection & fall event**
  - The DPS368 offers highest measurement precision of 0.002 hPa (±2 cm of altitude detection) at high temperature stability (0.5 Pa/K)
  - Distinction between everyday movements and a fall event possible due to fast pressure value readout frequency of up to 200 Hz

- **Highest accuracy and fast signal pick-up for location tracking**
  - The DPS368 ensures higher accuracy of GPS tracking by providing highly accurate Z-Axis value
  - Infineon’s GPS LNA portfolio improves GPS accuracy into 30 cm range

- **Device protection to ensure high quality user experience**
  - Infineon’s TVS diodes portfolio has ultra low clamping voltage, high signal immunity with ultra low parasitic capacity & Pin-to-Pin compatible packages following the Pick-and-Place standard
  - OPTIGA™ Trust B (hardware based security solution) ensures excellent battery protection

- **Charging without wires**
  - Smallest and lowest cost low-power wireless charging solution
  - Unparalleled flexibility of positioning, incl. 90° charging
  - One-to-one and multiple device charging
  - In-band Rx-Tx communication

- **Secure cellular network connection**
  - Infineon eSIM is a complete solution for authentication to cellular networks, providing broadest proven interoperability with MNOs
  - Extensive design-in support
  - Up to 1.2 MB free user NVM for profiles, applications and data

- **Low power consumption to increase battery life**
  - > 50% less consumption in standby mode with NFC security solution due to boosted NFC design
  - Very low energy consumption down to 0.5 µA based on flexible readout speed of barometric pressure with DPS368 pressure sensor
  - GPS LNA has lowest power consumption due to operation at 1.2 V, resulting in up to 30 min longer battery life

- **NFC turnkey System-in-Package**
  - Provides smallest footprint (5 x 5 mm) and is compatible with low profile MCU
  - DPS368 pressure sensor with smallest form factor (2 x 2.5 x 1.1 mm) for waterproof pressure sensors (50 m, 1 hour) on the market
  - GPS LNA provides smallest form factor with 4-pin integration
  - Ultra-small & thin packaged (0.4 x 0.2 x 0.15 mm) TVS diodes
  - Extra small SMD package (1.5 x 1.1 mm) OPTIGA™ Trust B

- **Small form factor for high functional integration**
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