



## CHILL BAND+

The Chill Band+ is a wearable wireless band able to monitor multiple parameters from user's wrist, Photoplethysmograph (PPG), Galvanic skin response (GSR) both with high dynamic range and accuracy and the skin temperature and movements are all sensed at configurable rates from the user's wrist.

The Chill Band+ is battery operated and it can connect to a PC or a cellphone via standard Bluetooth® profile. All raw data collected by the wristband are also accessible via USB.

The Chill Band+ is a demonstrator that can be used for data collection in research and clinical environments across multiple applications. One of such application scenario where it is ideal for use is stress research. Heart rate (HR), heart rate variability (HRV), GSR and temperature have been proven to be important physiological indicators of stress. The Chill Band+ can be used for the development of stress algorithms both in controlled settings and ambulant environments. The combination of physiological sensing with acceleration and gyroscope measurement gives a complete user profile on which stress detection models can be built. The content of the display can be modified to incorporate different types of feedback, related to physiology, stress, time, etc. The Chill Band+ is one of multiple examples of imec technology. The Chill Band+ is not a product and does not have certifications or testing to be marketed and sold to the public.



## KEY FEATURES

- Galvanic Skin Response (GSR)/Electro Dermal Activity (EDA) with high dynamic range (0.05 – 20 $\mu$ S) at the lower side of the wrist
- PhotoPlethysmoGraph (PPG) with a dynamic range of 50uA at the upper side of the wrist
- Skin temperature at the upper side of the wrist
- Wrist movement (3-axis accelerometer & 3-axis gyroscope)
- Bluetooth-enabled (cellphone communication)
- USB-accessible (data) and rechargeable battery
- High storage capacity (15+ days of data)
- Storage of signals in raw format. Raw data is accessible over USB
- Ergonomic and user-friendly design
- Made with hypoallergenic materials

## APPLICATION FIELDS

- Galvanic skin response /Electro dermal activity monitoring
- Wrist motion tracking
- Attention monitoring
- Stress detection and analysis
- Wearable technology
- Quantified self
- Conscious wellbeing
- Corporate health
- Big data
- PPG monitoring

- Personal health coach
- Mental health

## POTENTIAL USERS AND CUSTOMERS

- Original Equipment Manufacturers (OEM)
- Wearable technology device makers (smartwatches, smart glasses, smart eyewear, smartphones)
- Health and lifestyle (smartphone) application developers
- Corporate health providers
- Healthcare providers (doctor's office, hospitals)
- Insurance companies
- Research professionals (data collection, clinical trials, algorithm development)

## KEY BENEFITS

- Long-term monitoring
- Quality data from subjects acquired in a natural form factor
- Integration with other sensors and sensor data
- Multi-parameter acquisition
- High-level understanding of user's data over long periods of time
- Adding functionality to existing wearables
- Adding functionality to existing applications and services
- Enabler for corporate health tracking
- Tracking of population at risk of stress or burnout
- Development of next-generation tools for health and lifestyle technologies
- Feedback via display

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