

#### **Your benefits**

- Comfortable sensor solution for mobile, long-term measurement without adhesive electrodes
- Medical grade signal acquisition
- Easy to use especially for cardiac risk patients
- Storage and wireless transfer of medical grade data
- Artifact compensation via redundancies
- Context evaluation of ECG and activity
- Washable textile with primary sensors

# What we seek

Strategic partnership to bring our Medical Grade Wearable CardioTEXTIL to the market.

- Potential investment for final product development.
- Licensee partnership for approval, market entry and commercialization of CardioTEXTIL as a medical device.

Fraunhofer Institute for Integrated Circuits IIS

Management of the institute
Prof. Albert Heuberger (executive)
Prof. Bernhard Grill
Prof. Alexander Martin

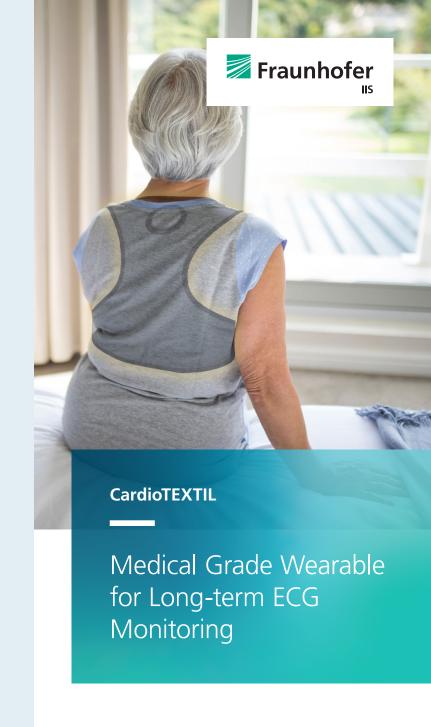
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Cardiac arrhythmias such as atrial fibrillation are a growing health problem worldwide.

Approx. 2.2% of the world's population are affected, and the trend is rising.

The early detection of cardiac arrhythmias is a key factor for successful therapy and the avoidance of late complications – currently available diagnostic tools only allow time-limited monitoring or require an implant:

Wearables: 30 secondsHolter ECGs: Up to 72 hours

■ Implantable Loop Recorder: several years



Due to this limited monitoring time, some cardiac events cannot be detected and an early diagnosis is not always possible.

Extend your portfolio with real long-term monitoring

CardioTEXTIL – Medical Grade Wearable for cardiac monitoring in everyday life

Easy to use – unobtrusive – continuous monitoring in everyday life

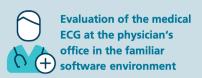
Wireless data transmission to patient app





Data-secure transfer to the physician's software solution

Telemedical evaluation of the ECG – without the patient having to come to the practice





#### Potential Use Cases for CardioTEXTIL

- Telemedical ECG
- Postoperative and post-interventional monitoring
- Immediate intervention by medical staff through live data transmission
- Cardiac Rehabilitation
- Continuous ECG-Monitoring for everyday use due to comfortable textile design
- Alternative to Holter ECGs and Implantable Loop Recorders
- Excellent patient compliance due to textile integrated ECG (no adhesive electrodes, no cables, no surgery)

## Medical Grade Wearable: Textile-integrated 3-channel ECG

With its polymer-based dry electrodes, CardioTEXTIL can easily measure electrical cardiac activity on the go.

The comfortable textile carrier allows an extended monitoring period of several days or even weeks. Compared to conventional ECG systems, patients can easily put on and take off CardioTEXTIL themselves.

Thus, the medical-grade wearable allows detailed diagnosis and monitoring of cardiac arrhythmia and other cardiovascular diseases in everyday life.

## **Multichannel ECG Diagnostics**

With four integrated polymer electrodes and plug-in electronics, CardioTEXTIL can record a 3-channel ECG. Signals are recorded according to standard medical leads.

Raw data is used to calculate and store heart rate (HR) and heart rate variability (HRV) parameters. Signal interferences are compensated by the redundancy of several channels leading to higher quality of measurement results.

## **Live Data Transmission and Analysis**

The removable electronics box processes and digitizes the data. The ECG signals are stored on the sensor electronics or transmitted via Bluetooth and displayed as an ECG curve on the screen for the treating doctor. With our algorithms, we interpret the data and can pre-classify cardiologic events.

#### **Technical Details**

- Signal acquisition according to standard medical leads:
   Einthoven I, II, III
- Optional further channels like Goldberger leads and Wilson chest deviation
- Inertial sensor measures acceleration in 3 axes
- Data transfer via generic Bluetooth technology or Bluetooth® LE