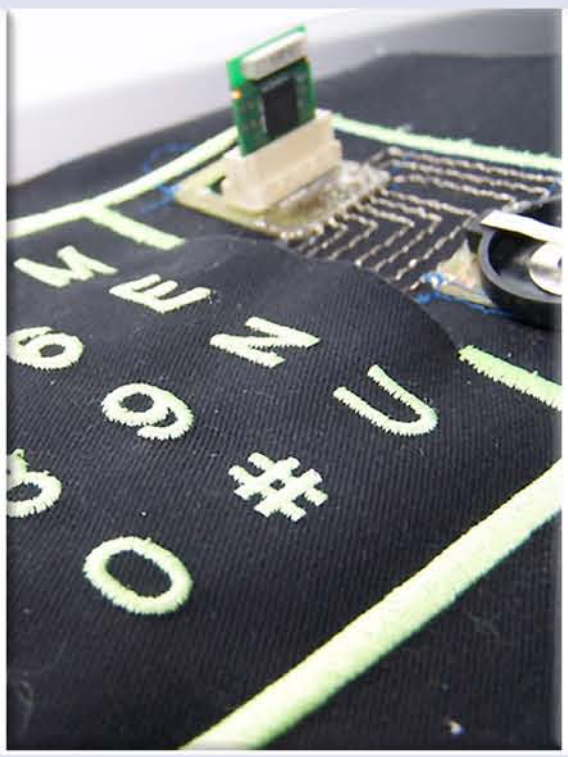
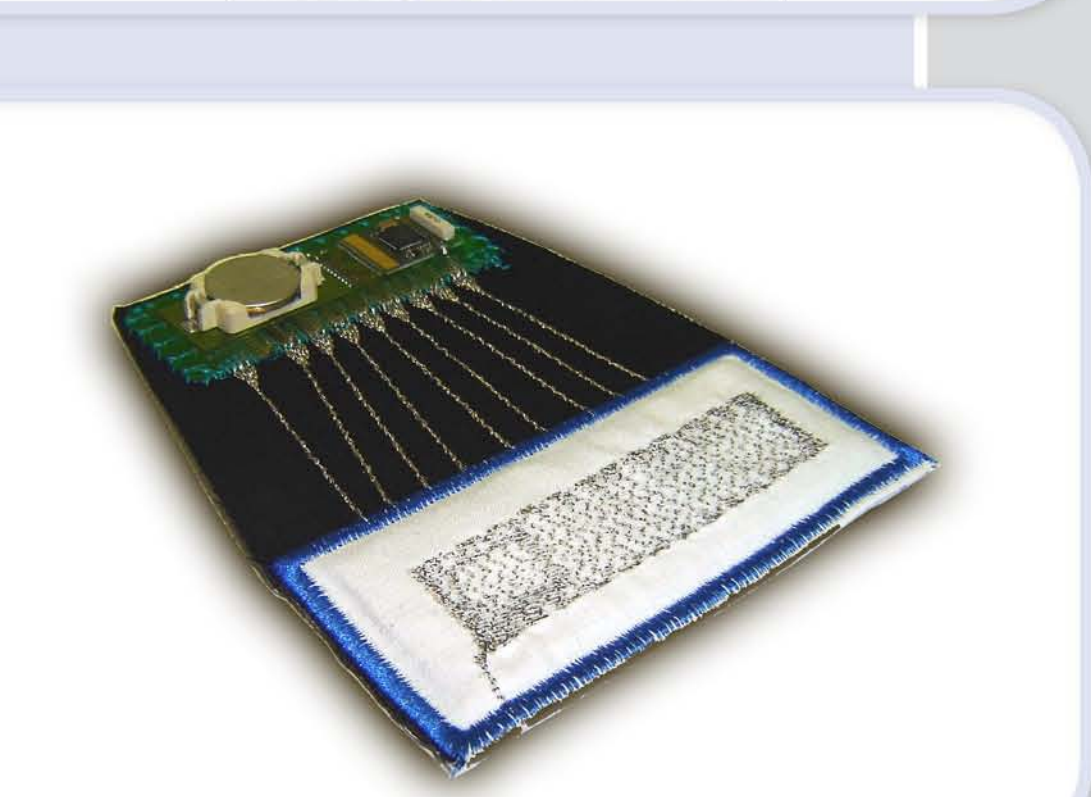
Embroidered Electronics

Innovative Wiring and Connection Technology





«THE TARGET»

- For some time there are extensive researches in the area of conductive textiles. So far, however, was the creation of permanent reproducible electrical connections in textiles an unsolved problem.
- In cooperation with regional partners IK Elektronik has developed a special embroidery technology for realisation of electrical functions in textiles and especially for reliable textile connections.
- IK Elektronik presents first innovative wiring and connection technology using conductive threads. Using these technology one can connect electronic modules and components using textile wires.

«THE METHOD»

- The result of the research is a special technology and topology for reliable connecting of FR4 PCB boards with 100% conductive threads.
- The benefits are:
  - traditionally production technology and the functional diversity of printed circuit boards can be used
  - cost-saving integration of electronics in textile environment
  - mechanical flexibility
  - high robustness against cracks and breaks
  - high durability using resistant materials
  - low weight
- The test of the reliability and lifetime was done very extensive. The static and also the dynamic properties were tested under harsh conditions.

«THE APPLICATION»

- Extensive applications are expected in the areas of intelligent clothes textiles.
- For demonstrating the power and possibilities of the technology IK Elektronik has created a Textile Control Panel:
  - The Control Panel consists of a textile bracelet with a textile keyboard, integrated wireless data transceiver and battery. All keyboard commands are transmitted wireless to a Base Station on a PC.
  - The Base Station is a small unit with a wireless transceiver and a standard interface to the PC.
  - Both Control Panel and Base Station are freely configurable and act as a wireless keyboard for presentations and remote control of PC software, for example.
- Technology applications:
  - Textile remote controls
  - Safety clothes for fire brigades
  - Automotive textile components
  - Medical and fitness equipment
  - Telemetry of human or animal bodies and life parameters