



Wireless Sensor Patches

Printed/Hybrid Adaptive Sensor Solutions for a Wide Range of Applications

The Advanced Sensors & Electronics Technologies research unit at Silicon Austria Labs boasts a diverse infrastructure for manufacturing and characterizing tailored sensor patches.

These battery-free patches are capable of wireless communication via UHF, NFC, or chipless technology with a specific reader module or a cellphone etc. Equipped with customized printed sensors they enable the measurement of physical/environmental parameters such as humidity, moisture, temperature, or strain. They feature a small footprint, are thin and flexible and typically weigh less than 5 g. The sensor patches can be printed with various functional materials on different substrates, allowing to address specific application requirements like harsh conditions or sustainability.

These wireless sensor patches are versatile and appealing for a broad spectrum of use cases, including healthcare, quality monitoring, product monitoring, environmental monitoring, wearables, or automotive industry.

Benefits & Advantages

- **Adaptability** – customizable shapes, ideal for applications where specific designs or integrations are needed.
- **Ease of integration** – wireless operation avoids additional components or complex installation.
- **Printable on various materials**
- **Unobtrusive** – small footprint, low weight, thin and no battery.
- **More sustainable** – less material waste and energy consumption, possibility to use biodegradable materials .
- **Rapid prototyping**

Typical Sensor Functions

- Humidity
- Moisture
- Temperature
- Strain
- Proximity

Wireless Read-Out via ...

- UHF
- NFC
- Inductive coupling
- BLE, LORA etc. (with battery)



ABOUT SAL

Silicon Austria Labs (SAL) is a top European research center for electronic based systems (EBS). The application-oriented center offers cooperative research & services at three locations – Graz, Linz and Villach – in the pioneering research areas of Sensor Systems, Microsystems, Intelligent Wireless Systems, Power Electronics and Embedded Systems.

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