ETH zürich

# Licensing Opportunity

## Zero-power receiver for touch communication and touch sensing

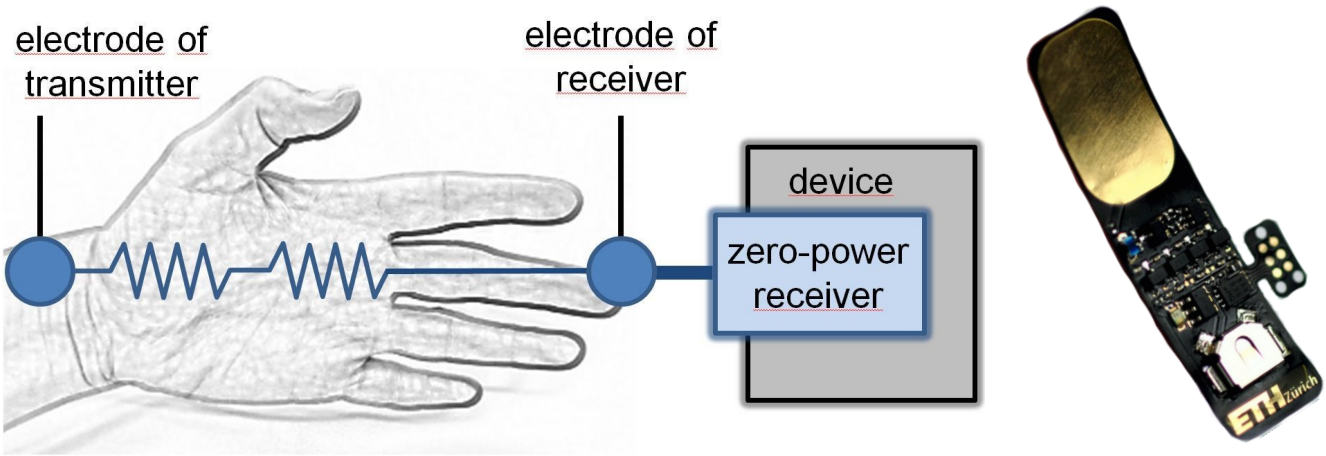


Fig 1. *(left)* Upon touch the transmitted signal first charges the receiver and then passes its data. *(right)* Prototype of the zero-power receiver

### Summary

The zero-power receiver for touch communication works as a secure and intelligent zero-power switch and saves battery power of devices in stand-by mode.

### Background

As more and more smart devices enter the market, the need for personalized settings increases. Examples are activating door buttons to restricted areas, activating wearable devices on demand or simply setting the coffee machine to one's preferences.

### Invention

Smart devices that are equipped with the zero-power receiver can be activated by touch communication. The user wears a sender, which transmits an activation signal via the skin/body onto the receiver. As no signal is broadcast into the air, the signal is well protected against tapping of data. Furthermore, the activation signal from the user carries enough energy to power the receiver, which by consequence does not require any battery. Devices equipped with the zero-power receiver can be completely switched off and still remain ready to use. The conventional stand-by mode which requires the continuous powering of a receiver becomes obsolete, moreover the zero-power receiver can replace RFID/NFC in many application scenarios.

### Features & Benefits

- No internal energy source needed
- Programmable for customized response
- No radio device needed and more energy efficient than RFID/NFC

### Fields of Application

- Touch secure switch
- Smart wearables
- Energy efficient alternative to stand-by mode
- Short range zero-power communication

### Patent Status

- Patent pending

### Publication

- Strebel R., Magno M., 2018 17th ACM/IEEE International Conference on Infomation Processing Sensor Networks, DOI 10.1109/IPSN.2018.00038

### Technology Readiness Level

1 2 3 4 5 **6** 7 8 9

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