Zurich University
of Applied Sciences

**zh
aw** **School of
Engineering**

InES Institute of
Embedded Systems

Audio over Ble

This bachelor thesis takes the findings of a previous project work as a basis and extends them. In the previous project work it was proven on the basis of detailed measurements and tests that with a data transfer of ~300 kBit/s per link, a sufficiently large data transfer rate can be achieved, so that for example, acceptable quality audio can be transferred using Bluetooth Low Energy.

This bachelor thesis should show that in practise music can be transferred between two BLE-Nodes using the BLE-technology. The following issues are documented and measured on the basis of this test set-up:

- Reliability of wireless links.
- Bi-directional transmission.
- Use of broadcast scenario.
- Data transfer rates are measured and documented.
- Power consumption.

For the construction of the BLE-Nodes, XMOS-microcontrollers are used, which can execute several threads in parallel. One device controls at most five BLE-Radio, which build a BLE-Node with the microcontroller.

Diplomand
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Dozent
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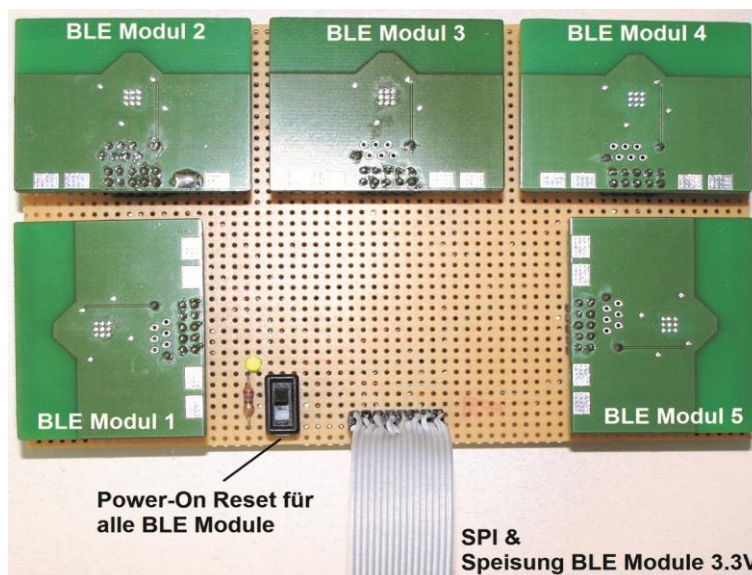
The BLE-Node with five attached EM9301 Radios.