

Bachelor's Thesis

HaBee: HaLow to ZigBee Cross Technology Communication

Abstract

Cross technology communication (CTC) can close the gap between the different technologies in the 2.4 GHz band.

As for example WiFi can not communicate to ZigBee, with signal emulation WiFi can transmit a message that looks like a valid ZigBee message in the air and can be received by a ZigBee device.

While this is already done in the 2.4 GHz band, WiFi is also available as HaLow in the 868 Mhz band.

In this band CTC has not been studied so far.

Content

Goal of this thesis is to study the possibility of HaLow to ZigBee (CTC).

Therefore, differences in the physical layer of both technologies have to be identified and solutions to bridge this gap have to be presented.

The limitations of the approach have to be studied in simulations.

Additionally, a hardware setup has to be created to evaluate the performance of the own work in reality.

Requirements

- * Interests in simulations and experimental work
- * Interests in MATLAB and Python
- * Interests in signal processing
- * Interests in statistics
- * Interests in ZigBee and HaLow / WiFi
- * Scientific work