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The Communication between CC1310 and Raspberry-pi update

Goals

To find out the required sample rate between cc1310 and raspberry-pi. The priority of communication task is to determine the required sample rate and data logging with byte size. Once we determine the sample rate, we can determine to use which communication way.

Problem

Without a built system to test the required sample rate, it would be hard for us to determine it. We may get a rough value according to MATLAB simulation or data from similar research.

General approach

This week's work was to find out the data from similar research. In Dr.kan's paper, they transferred to the baseband and sampled by the ADC. They communicate ADC to main station through Bluetooth module. The Tx output power is 29dBm from 700Mhz to 1100Mhz.[1] The Bluetooth data rate up to 3 Mbps. According to "UART vs SPI vs I2C", the Maximum supported data rate of Uart is about 230 Kbps to 460kbps. Maximum data rate limit is not specified in SPI interface. Usually supports about 10 Mbps to 20 Mbps[2]. So we may switch to SPI for our project

Planned Course of Action

May consider switch to SPI base on research. Start to look for SPI code building for CC1310 and Raspberry-pi

Resources and relevant Forum Posts

[1] Y. Ma, X. Hui, and E. Kan, "3D Real-time Indoor Localization via Broadband Nonlinear Backscatter in Passive Devices with Centimeter Precision," Oct. 3, 2016.
<https://dl.acm.org/citation.cfm?id=2973754>.

[2] "UART vs SPI vs I2C," <http://www.rfwireless-world.com/Terminology/UART-vs-SPI-vs-I2C.html>.