MSc Degree Lab Report – Signal Processing of Underwater Beacons for AUVs

Title: 2nd transducer setup and firmware update

Purpose: Prepare the in air tube channel sound propagation testing

Material: Transducer (new), PCB \* 1

Procedure:

Data:

Figure:

Calculation:

Conclusion:

Task:

* Test receiving and pinging
* Offline signal processing (correlation and power spectrum)
* Programme to send different pulses
* Downsampled the system
* Find the index; get used to the storage buffer

Q:

Hej, I am curious about what the resonant frequency of the transducer is dependent of? I knew it is 47kHz in the one we are using, is it a innate property of the piezo-electrical material (red membrane)? Will it depend on the voltage level, or the parameters that are set in the firmware? Can I change the resonant frequency in the firmware drastically? Say, set F0 to be 10 Hz, or 1e8Hz? ☺ will it burn the platform?

Q: