CA – CFAR in Matlab: Lab 5 Assignment

Moodle: Download CA_CFAR_Student.m

Implement in Matlab

- Spectral Representation of the test signal
- Implement the CA_CFAR with the following parameters:
  - N: Number of Samples taken
  - NG: number of guard cells
  - NR: number of reference cells
  - PFA: Probability of false alarm
- Use the given ADC-Samples of a real measurement and test your CFAR Algorithm
- Investigate which N, NG and NR performs best on the ADC Data. Explain your choice
- In order to test your CFAR Algorithm:
  → Use the transferred ADC data in Matlab generated with your Radar Module

Implement on the PSoC Device

Transfer the CFAR Algorithm from Matlab To C
In order to test your C-code implementation: transfer both to Matlab: the ADC Data and the in C performed CFAR Algorithm

Turn on the red LED

If your CFAR in C is working properly: Turn off your UART transfer, run CFAR solely on your PSoC and turn on the RED LED for 0,5s, if you detect a movement.