Lab 1

Please create a folder on the Desktop and delete the folder after you finish the lab.

Spectrum Analyzer

* Follow the lab manual step by step
* Screenshots for lab report
  + FM: **(1) Spectrum**; **(2) Waterfall**
  + Wi-Fi: **(3) Spectrum**; **(4) Waterfall**
  + **(5) Flow graph**

Transmitter

* Build the transmitter following the manual
* Download the file “modSignal\_BPSK.wav” from Canvas
* Use the following carrier frequency to prevent interference

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| WorkStation # | 1 | 2 | … | 10 |
| Carrier Frequency | 2.41 GHz | 2.42 GHz | 2.4xGHz | 2.50GHz |

* Copy the flowgraph from 4.1 to the transmitter to observe the received signal
* Screenshots:
  + **(6) Spectrum of the RX signal**
  + **(7) Flowgraph**

Lab Report Format (for all 6 labs)

1. Introduction -> short
2. Lab Procedure -> what you did in the lab
3. Results & comments
   1. Matlab figures & screenshots
   2. Explain whether the results are expected
4. Answer all the questions
5. Conclusion -> short
6. Matlab code

Open terminal in UBUNTU: Ctrl + Alt + T

Copy & paste in terminal: Ctrl + Shift + C/V

Check Connected USRP: uhd\_find\_devices

Transmitter Gain Range: 0-76 dB

Receiver Gain Range: 0-89 dB