LISA Sync Project Requirements

HL

This project counts total 10 points. The soft copy of the report plus the source code exported as a project have to be submitted on line to CANVAS. In this project you will

1. (3 pts) Design and prototype LPC1769 micro-processor system board or your selected alternative baord, and enable a GPIO communication for implementation of LISA Sync algorithm.

2. (2 pts) Generate LISA algorithm on your target platform by migrating your homework to the target platform and conduct testing without oversampling on landline connection case.

Note:

2.1. use bit rate: 1 Kbps.

2.2. set up a 1K bit buffer for processing purpose.

3. (3 pts) Conduct LISA algorithm test in 2 with wireless RF set up without oversampling.

4. (2 pts) At the receiver end, create oversampling (5X faster reading then the bit rate), then use voting algorithm to perform pre-processing.

5. Submit project report together with

(1) exported project, the submission is subject to testing and verification.

Use this IEEE style template to create your report, please strictly follow the format, do not change ANY type setting styles. https://github.com/hualili/CMPE240-Adv-Microprocessors/blob/master/2018-10-Guidelines%20for%20Report%20Writing%20v2%20HL%202015-9-9.doc

(2) 5 seconds video clips.

5. Rubrics for lab

(1) Satisfies the requirements stated in 2018S-17-Lab-report-rubrics.txt;

(2) Submit a Lab report to cover the following content:

(2.1) system block diagrams of the entire system setup including laptop computer;

(2.2) system block diagram of the RF board interface;

(2.3) Schematics of the RF board with both RF modules (Rx and Tx) and landline (RF45 connector and wire/pin connectivity. For example which pin is for GND, which pin for Rx, and which pin for Tx, as well as common GND pin);

(2.4) table(s) of the pin connectivity;

(2.5) photo(s) of the implementation.

(3) The software requirements of the lab report

(3.1) software part should cover

a. Algorithm description;

b. Flow chart(s);

c. Pseudo code;

d. testing and verification section;

e. source code listing (appendix).

(END)