Mini Project #1

Rubric

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Criteria	Ratings			Pts
This criterion is linked to a Learning Outcome *Bits to Symbol Conversion* This step which involves taking the input bit stream(from the initial text) and mapping it to symbols according to the 3GPP Ts 36.211.	**3 pts** **Full Marks** If all steps are performed correctly.	**3 to >0.0 pts** **Partial Correctness** Partial grading if one or more of the included schemes (BPSK,QPSK...) are correct.	**0 pts** **No Marks** If none of the modulation schemes are correct.	3 pts
This criterion is linked to a Learning Outcome *Serial to Parallel Conversion* Based on the OFDM system description, sub carrier bandwidth and system bandwidth gather number of channels and perform serial to parallel conversion of input vector symbol stream.	**1.5 pts** **Full Marks** If serial to parallel conversion performed correctly	**1.5 to >0 pts** **No Marks** based on whether it is implemented correctly and there are minor mistakes in calculation or just done incorrectly.		1.5 pts
This criterion is linked to a Learning Outcome *IFFT* doing the IFFT on the Parallelized data.	**1.5 pts** **Full Marks** done correctly	**0 pts** **No Marks** done incorrectly.		1.5 pts

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This criterion is linked to a Learning Outcome *Cyclic Prefix addition* Calculating the correct number of samples to copy and add to the head of each OFDM symbol that you now have after performing IFFT.	**1.5 pts** **Full Marks** if done correctly	**1.5 to >0 pts** **No Marks** based on calculation mistakes and/or implementation idea technique	1.5 pts
This criterion is linked to a Learning Outcome *OFDM Output Buffer* Gathering all the transmit OFDM symbols (each transmit symbol is an CP + OFDM symbol) that you have generated now into a mat file and providing that to us for testing AND the vector containing your input bit stream.	**1.5 pts** **Full Marks** File generated correctly	**0 pts** **No Marks** File not generated correctly	1.5 pts

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This criterion is linked to a Learning Outcome *Brief Write Up* Write up should include an introduction (abstract) outlining the contents of the report and summarizing the work performed The body of the report should include a presentation of the technology and a functional description of the system, with a 1-2 line description of each component in the system Include a functional flow diagram of the system Include a description of identified technical problems and how they were or were not able to be overcome. Include the upconversion component diagram Include a write up of any tests performed to verify functionality Include a write up of the results of the testing and any modifications that were made based on these tests Include a summary of the final results and overall functionality	**3 pts** **Full Marks** If the write up description is justified sufficiently enough	**3 to >0 pts** **Partial Marks** This will be graded based on how the report is written and if some pieces are missing or is inconclusive	3 pts

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Criteria	**Ratings**		**Pts**
This criterion is linked to a Learning Outcome *Aesthetics* Code runs, performance is fast and efficient. Variables are defined coherently (with good names). Comments are included. Values are not hard coded. Indenting the code. Quality of execution.	**3 pts** **Full Marks** If description is met satisfactorily.	**3 to >0 pts** **Partial Grading Scheme** Points given based on 1 or more missing pieces as given in the description.	3 pts
Total Points: 15			