

**Review Form 1.7**

Journal Name:	<b>Journal of Engineering Research and Reports</b>
Manuscript Number:	<b>Ms_JERR_119091</b>
Title of the Manuscript:	<b>Exploring Performance Metrics of OFDM, F-OFDM, FBMC, and UFMC Modulation Techniques for 5G Wireless Communication in Terms of PSD, BER, and SNR</b>
Type of the Article	<b>Original Research Article</b>

**PART 1: Review Comments**

	<p><b>Review 1. Further exploration of the comparative performance metrics among OFDM, F-OFDM, FBMC, and UFMC modulation techniques.</b></p> <ol style="list-style-type: none"> <li>2. Analysis of how varying levels of accurate channel state information influence modulation performance metrics.</li> <li>3. Examination of the computational efficiency and effectiveness of forward error correction schemes integrated with each modulation technique.</li> <li>5. Assessment of power budget constraints and penalties associated with deploying higher-order modulation schemes in practical 5G networks.</li> <li>6. Clarity on the methodology used for MATLAB simulations, including specific parameters and scenarios considered.</li> <li>7. Clearly define how CSI is acquired and utilized within the context of your simulations and analyses. Explain whether perfect CSI or estimated CSI models were used and their impact on results. Discuss the specific metrics used to quantify CSI accuracy or reliability in your simulations (e.g., coherence time, Doppler spread) and their implications on modulation performance.</li> <li>8. Detail how CSI affects the performance metrics (PSD, BER, SNR) of each modulation technique studied. Consider scenarios with varying levels of CSI accuracy or different channel conditions (e.g., static vs. dynamic channels).</li> <li>9. Include a discussion on how adaptive modulation and coding (AMC) strategies leverage CSI to dynamically adjust modulation order and coding rates based on channel conditions.</li> <li>10. Explain the specific FEC schemes implemented in your simulations (e.g., convolutional codes, turbo codes, LDPC codes) and justify their selection based on their performance in 5G scenarios. Provide details on how FEC overhead (coding rate) impacts overall spectral efficiency and BER performance for each modulation technique.</li> <li>11. Analyse the impact of higher-order modulation schemes on the power budget, specifically focusing on the increased sensitivity to nonlinearities and impairments (e.g., phase noise, amplifier distortion).</li> </ol> <p><b>Reviewer's comment</b></p> <ol style="list-style-type: none"> <li>12. Quantify the power penalty associated with higher-order modulation in terms of required transmit power or reduced link margin compared to lower-order modulation schemes.</li> <li>13. Incorporate Monte Carlo simulations to validate and extend the robustness of your findings. This approach can provide statistical confidence in your results by averaging over multiple random channel realizations.</li> <li>14. The paper needs more details on the technical and practical discussion, as well as comparisons with recent work, are thorough. Update and enhance references for practicality, impactful, foundation, and comprehensiveness up to the last two years (2024).</li> </ol> <p><a href="https://doi.org/10.1007/s11082-024-06692-1">https://doi.org/10.1007/s11082-024-06692-1</a></p>	<p><b>Author's comment</b> (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</p>
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	<p><a href="https://doi.org/10.1007/s11082-023-04772-2">https://doi.org/10.1007/s11082-023-04772-2</a></p> <p><a href="https://doi.org/10.1049/ote2.12111">https://doi.org/10.1049/ote2.12111</a></p>	
<p><b><u>Compulsory</u></b> REVISION comments</p> <p>1. <b>Is the manuscript important for scientific community?</b> (Please write few sentences on this manuscript)</p> <p>2. <b>Is the title of the article suitable?</b> (If not please suggest an alternative title)</p> <p>3. <b>Is the abstract of the article comprehensive?</b></p> <p>4. <b>Are subsections and structure of the manuscript appropriate?</b></p> <p>5. <b>Do you think the manuscript is scientifically correct?</b></p> <p>6. <b>Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form.</b></p> <p><b><u>(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)</u></b></p>	<p><b>Partly.</b></p> <p><b>Yes.</b> <b>Somewhat.</b></p> <p><b>Can be improved.</b></p> <p><b>Moderate</b> <b>Medium</b></p>	
<p><b><u>Minor</u></b> REVISION comments</p> <p>1. <b>Is language/English quality of the article suitable for scholarly communications?</b></p>	<p>Major editing of the English language required.</p>	
<p><b><u>Optional/General</u></b> comments</p>		

**PART 2:**

	<b>Reviewer's comment</b>	<b>Author's comment</b> <i>(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
<p><b>Are there ethical issues in this manuscript?</b></p>	<p><i>(If yes, Kindly please write down the ethical issues here in details)</i></p>	

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