



# International Journal of Digital Multimedia Broadcasting



## Journal Menu

- [Abstracting and Indexing](#)
- [Aims and Scope](#)
- [Article Processing Charges](#)
- [Articles in Press](#)
- [Author Guidelines](#)
- [Bibliographic Information](#)
- [Contact Information](#)
- [Editorial Board](#)
- [Editorial Workflow](#)
- [Reviewers Acknowledgment](#)
- [Subscription Information](#)

- [Open Special Issues](#)
- [Closed Special Issues](#)
- [Published Special Issues](#)
- [Special Issue Guidelines](#)

[Call for Proposals for Special Issues](#)

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Research Article

## BEP/SEP and Outage Performance Analysis of L-Branch Maximal-Ratio Combiner for $\kappa - \mu$ Fading

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[Abstract](#)

[Full-Text PDF](#)

[Full-Text HTML](#)

[Linked References](#)

[How to Cite this Article](#)

### Abstract

Maximal-ratio combiner (MRC) performances in fading channels have been of interest for a long time, which can be seen by a number of papers concerning this topic. In this paper we treat bit error probability (BEP), symbol error probability (SEP) and outage probability of MRC in presence of  $\kappa - \mu$  fading. We will present  $\kappa - \mu$  fading model, probability density function (PDF), and cumulative distribution function (CDF). We will also present PDF, CDF, and outage probability of the L-branch MRC output. BEP/SEP will be evaluated for broad class of modulation types and for coherent and noncoherent types of detection. BEP/SEP and outage performances of the MRC will be evaluated for different number of branches via Monte Carlo simulations and theoretical expressions.