

# Ofdm bit error rate simulation



## Overview

The purpose of this paper is to use a Matlab simulation of OFDM to analyse the Bit Error Ratio (BER) of a transmission varies when Signal to Noise Ratio (S/N Ratio) and Multipropagation effects are changed on transmission channel. INTRODUCTION OFDM is a bandwidth efficient signaling scheme for digital communications that was first proposed by Chang. Based on correct modeling of the. Due to noise in the channel, the transmitted signal may develop a phase error and magnitude error at the received signal which leads a bit error at the output of the system. Initially magnitude error is considered in the channel and estimates its BER over Ricean and Rayleigh fading. The simulation results show that the simulated bit error rate is in good agreement with the. In this paper we are using block-type (insert pilots in the frequency domain) and comb-type (insert pilots in the time domain) pilot based channel estimation methods. In this paper our objective is to.

## Article Content

Aug 06, 2025

Analysis of potential 5G transmission methods concerning Bit Error Rate ...

This initial approach does not consider symbolic interference (content) and interference between channels (ICI) . In 1970, the OFDM method was patented after a careful performance

Sep 17, 2025

Comparative Performance Analysis of OTFS and OFDM Modulations

V. C ONCLUSIONS This paper presents a performance comparison between OTFS and OFDM modulation schemes over a variety of wireless communication scenarios. Through simulations, we

Nov 01, 2025

ESTIMATION OF BIT ERROR RATE IN OFDM SYSTEM OVER

In this chapter, the Bit error rate (BER) performance is evaluated in OFDM system using BPSK, QPSK, 8-PSK and 16-PSK modulations with number of sub-carriers N is taken as 32, 64, 256, 512 and 1024

May 18, 2026

Performance Evaluation of BER in OFDM Systems

This study evaluates the Bit Error Rate (BER) performance of OFDM systems under these fading conditions using MATLAB Simulink.

May 18, 2026

A Generalized Bit Error Rate Evaluation for Index Modulation Based OFDM ...

Our general BER expression has been shown to be in excellent agreement with numerical simulation and proven to be accurate and can serve as a reference for the design and evaluation of

Mar 02, 2026

Power line time transfer technology based on LFM-OFDM and DS

To address the issue of interference caused by power line channel noise on time transmission signals, a power line time transmission technology based on OFDM modulation is proposed to use linear

Oct 05, 2025

Bit Error Rate Performance of QPSK Modulation and OFDM-QPSK

The performance of BER of QPSK over AWGN and Rayleigh channel is compared. OFDM is an orthogonal frequency division multiplexing to reduce intersymbol interference problem. Simulation of

Sep 23, 2025

Bit Error Rate Performance of DFT-S-OFDM Systems Under Alpha

Simulation results demonstrate that the derived theoretical and approximate BERs both agree well with the simulated BER curves under various system parameters and impulsive noise conditions.

Dec 12, 2025

Bit Error Rate Calculation for OFDM with Synchronization Errors in

Abstract-In this paper we present an analytical approach to evaluate the bit error rate (BER) of OFDM systems subject to carrier frequency offset (CFO) and channel estimation error in Rayleigh flat fading

Oct 21, 2025

Adaptive Subcarrier-Index Modulation for OFDM Transmissions

Simulation results show that our ASIM OFDM system outperforms the existing OFDM and OFDM-SIM systems with lower error rates and higher transmission rates under various transmission conditions.

Apr 29, 2026

Sensing Integrated DFT-Spread OFDM Waveform and Deep Learning

Terahertz (THz) communications are envisioned as a key technology of next-generation wireless systems due to its ultra-broad bandwidth. One step forward, THz integrated sensing and

Oct 11, 2025

Bit Error Rate Performance Analysis of OFDM Using Matlab Simulation

The two main drawbacks of OFDM are the large dynamic range of the signals being transmitted and the sensitivity to frequency errors. Using a Matlab simulation we can easily change the values of S/N

Sep 09, 2025

Evaluation of Bit Error Rate Performance of Orthogonal Frequency ...

In this paper BER performance of OFDM systems has been evaluated with multipath Rayleigh fading channel and AWGN channel with different levels of M-QAM and M-PSK modulation schemes applied

Aug 03, 2025

Figure 6 from BER of OFDM system using concatenated forward error ...

Fig. 6 Simulation block diagram - "BER of OFDM system using concatenated forward error correcting codes (FEC) over Nakagami-m fading channel"

Oct 25, 2025

Bit Error Rate Performance Analysis of OFDM Using Matlab Simulation

The purpose of this paper is to use a Matlab simulation of OFDM to analyse the Bit Error Ratio (BER) of a transmission varies when Signal to Noise Ratio (S/N Ratio) and Multipropagation effects are

Feb 06, 2026

Block coding scheme for reducing PAPR in OFDM systems with

The major drawback in Orthogonal Frequency Division Multiplexing (OFDM) system is due to the high Peak-to-Average Power Ratio (PAPR), so the performance of the system is significantly degraded by

Jun 19, 2026

Comparative Study of Bit Error Rate with Channel Estimation in OFDM ...

In this paper our objective is to evaluate and improve the bit error rate (BER) performance of OFDM system by incorporating M-PSK and M-QAM digital modulation techniques over Rayleigh frequency

Nov 08, 2025

Diffusion Bridge-Based Joint Estimation and Detection Design for ...

Superimposed-pilot (SP) transmission improves spectral efficiency but poses significant challenges for receiver design due to pilot-data interference, which conventional algorithms struggle to address

Aug 13, 2025

Bit Error Rate Analysis of OFDM

Tools are provided for bit error rate analysis, generating eye and constellation diagrams, and visualizing channel characteristics. The system toolbox also provides adaptive algorithms that let you model

Feb 08, 2026

bit error rate in ofdm

bit error rate in ofdm the program plots the ber for bpsk modulation Gaurav Thawani  
Version 1.0.0.0 (2.38 KB)

Dec 22, 2025

Bit Error Rate Calculation for OFDM with Synchronization Errors in

In this section the bit error rates of OFDM systems with carrier frequency offset and channel estimation error in frequency selective fading channels are derived.

Jun 23, 2026

Simulation and Bit Error Rate Performance Analysis of 4G OFDM

In this paper a simulation based system developed for analysis and Bit Error Rate (BER) performance measurement of Orthogonal Frequency Division Multiplexing (OFDM) systems.

Jun 30, 2025

ESTIMATION OF BIT ERROR RATE IN OFDM SYSTEM OVER

ESTIMATION OF BIT ERROR RATE IN OFDM SYSTEM OVER FADING CHANNELS V. JAGAN NAVEEN1 AND V. KANNAN ABSTRACT. In this paper, flat fading channel accompanied with

May 17, 2026

Simulation and Bit Error Rate Performance Analysis of 4G OFDM

Guard length must exceed the maximum channel delay spread to minimize ISI. Doppler Effect impacts BER performance; higher symbol rates increase BER. Simulation models were implemented in

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