IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 3, Issue 1, April 2023
Impact Factor: 7.301

Performance Improvement of MIMO-OFDM System using V-Blast and STBC Technique

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Abstract: *MIMO-OFDM is a key technology for next-generation wireless communications (3GPP-LTE, Mobile WiMAX, IMT-Advanced) as well as wireless LAN (IEEE 802.11a, IEEE 802.11n), wireless PAN (MB-OFDM), and broadcasting (DAB, DVB, DMB). In MIMO-OFDM Wireless Communications with MATLAB. In this paper we are trying to show new communication technique using multiple inputs and multiple outputs (MIMO). With MIMO we are using orthogonal frequency division multiplexing (OFDM) which is useful in sending large amount of data in single frequency band. MIMO can be used with high data rate and reduced distortion with V-BLAST technique. In MIMO communication system V-BLAST, D-BLAST and Alamouti methods are used to improving bit error rate and signal to noise ratio. So In this I am using V-BLAST and D-BLAST algorithms and develop code using BPSK modulation system. For V-BLAST processing algorithms and CCI cancellation has two types of equalizers zero forcing (ZF) and Minimum Mean Square Error (MMSE). For project we use MMSE equalizer using Rayleigh channel. We consider spatial multiplexing systems in correlated multiple-input multiple-output (MIMO) Rayleigh channels with equal power allocated to each transmit antenna.*

Keywords: MIMO, OFDM, SNR, BER, V-BLAST

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ISSN (Online) 2581-9429
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Volume 3, Issue 1, April 2023
Impact Factor: 7.301

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