Abstract

The work is related to the use of Self Organizing Map (SOM) which is a type of unsupervised Artificial Neural Network (ANN), as an aid to Maximal Ratio Combining (MRC) in order to improve bit error rate (BER) values of demodulated signals in wireless channels that have both Gaussian and multipath fading characteristics. Among the architectures and algorithms suggested for ANN, the SOM has the special property of effectively creating spatially organised internal representations of various features of input signals and their abstractions. The advantage of using the SOM is that it doesn’t require any reference signal for training. Modulation technique used in this work is Bipolar Phase Shift Keying (BPSK) in Gaussian and multipath Rayleigh fading channels. The work adopts ANN block as part of a MRC set-up and is tested under SNR variation between -10 to 10 dB in Gaussian and multipath fading channels. The results generated justify the use of SOM neural network block as an aid to the MRC setup.

References

2001

Index Terms

Computer Science
Artificial Intelligence
Keywords
Awgn  Rayleigh  Mrc  Som  Mlp