ABSTRACT

In this cooperative communication, differential modulation is implemented to avoid fast fading due to carrier offset on a random channel. Where the carrier offset related to the differences of the oscillator between the sending and receiving, or relative movement of the sender and recipient. So, the channel can be shifted in order for a period of time.

This Final Project discusses and examining the methods of a double differential Modulation with protocol decode-and-forward (DDDAF) in cooperative communication. Analysis of the performance of this method as a parameter value Symbol Error Rate (SER) and Bit Error Rate (BER) obtained from the method DDDAF compared with the differential decode-and-forward method (DDAF). The allocation of resources and power relay is considered permanent.

The results is that the performance of double differential modulation is better than the differential modulation in order to avoid carrier offset on the channel with average value of Eb/No between 10dB to 30dB. The range of carrier offset can be handled by both of the methods are between -0.1π rad to 0.1π rad. Above this range, both of methods does not shows good performance. An assumed power allocation of 0,5 watt at both Source and Relay and also energy bit (Eb) is considered as value of 1 is required to make sure of optimal performance.