

ABSTRACT

Internet demand will be increase at the future. The need of wider bandwidth for larger capacity is also important. However, due to the limitation of frequency spectrum availability, there is necessary to have a new system that is capable to improve the efficiency of limited spectrum availability. Full-duplex wireless communication system is a radio communication system that uses the same frequency and time to transmit and receive data simultaneously. However, that's very possible to make self-interference. Full duplex, if possible, has tremendous implications for network design such as enabling cellular networks to double their spectral efficiency^[1].

Some researchers have found self-interference cancellation techniques such as passive and active cancellation technique. Passive cancellation technique has been explained by [2] uses cross polarization, directional isolation, and absorptive shielding technique. In addition, passive cancellation technique that has been done by [3] uses antenna separation method that can reduce interference by 45 dB in distance 40cm between transmit and receive antenna in one node.

Self-interference cancellation technique that proposed in this thesis is passive cancellation technique that use different type of circular polarization, such as Right Hand Circular Polarization (RHCP) and Left Hand Circular Polarization (LHCP) in a node. Based on that, the self-interference that obtained by full duplex system can be cancelled as maximum as possible.

Keyword : full duplex, self-interference, passive cancellation, circular polarization, RHCP, LHCP.