

## **ABSTRACT**

The use of wireless 2.4 GHz has grown rapidly. This is because product price that have a cheaper than other. In contrary the uses of the wireless 2.4 GHz, make a lot of interference among user and this is a weak spot of the technology, and also the wireless 2.4 GHz must fulfill a LOS (line of sight) condition.

With the uses of a single transmitter for multiple ISP will lower the problem of interference. Besides of that, the uses of OFDM (Orthogonal Frequency Division Multiplexing) make a user doesn't have fulfilled a LOS condition. This technology is suitable in Jakarta that have alot of building.

The result of this paper are a designed single transmitter that serve multiple ISP, which will maximize the use of frequency channel. For networking system used router that control traffic between ISPs and clients. From the transmission aspect, when using 11 Mbps transmit rate with a client distance 3.38 km, the client only get 5.152 Mbps throughput. This is because when using higher transmit rate, the sensitivity of receiver radio device is gradually decrease. In system stability, client get a good result because there no data loss.

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