

ABSTRACT

LTE technology has two duplexing concepts but currently the majority of service providers use frequency division duplex (FDD) technique, where the concept of duplexing requires a pair of frequencies in the delivery of information which means the downlink and uplink process are done at different frequencies.

While time division duplex (TDD) technique has its own advantages, this duplexing technique does not require paired frequencies such as those used in FDD technique. This is because the downlink and uplink process are done at different times, so the frequency efficiency can be done. Indoor network planning using distributed antenna system (DAS) with the concept of duplexing using TDD technique will be used to optimize mobile communication services in the room as it can be found in the building of School of Applied Sciences, Telkom University.

The result of indoor network design by applying TDD-LTE technique with frequency band 2.3 GHz in Applied Science School Building, Telkom University for the simulation of RSSI on the 1st floor until 4th floor obtained an average of -39.63 dBm, -42.88 dBm, -44.85 dBm, and -42.42 dBm while for SIR parameters obtained an average of 14.60 dB, 14.32 dB, 27.64 dB, and 17.09 dB. The obtained result from this design has reached the standard radio frequency target parameters used by related operator.

Key Words : DAS, Duplexing, FDD, IBC, TDD.