ABSTRACT

As higher data rate is needed by user, then the network should be able to transmit all data to core network. Link that used to send data to core network is X2 Interface and S1 Interface for LTE technology. Direct connection inter eNodeB is needed in X2 Interface[1]. In this case, not easy to build backhaul network because of too many site LTE. Therefore design of backhaul network is needed to get efficient confoguration.

This research, which was designed using the access *backhaul* technology Minilink *TN R4,* with throughput up to 1Gbps. Because the network throughput produced 9.04 Gbit, then earned *hop backhaul* needs 10 hops. The best scenario used in the process of designing the LTE backhaul network in Bandung city is that the topology of Scenario 2 (X2 Mesh and S1 Star). Second scenario is best from other scenario because Second scenario produced 118 backhaul antenna and received signal level is -44.14 dBm.

The results obtained in this final project is the design of technology-based backhaul Minilink *TN R4* which can meet the needs of the *free space loss* average of 127.24 dB, *Fading margin* of 10.16 dB, the transmit power of 28 dBm, *Received Signal Level* average of -61.4 dBm for scenario 1 (*X2 Mesh, S1 Ring*) and -44.14 dBm for scenario 2 (*X2 Mesh, S1 Star*).

Keywords : *LTE,* Minilink*, network throughput, fading margin, free space loss, received signal level.*