

ABSTRACT

In this digital era, the development of broadcasting industry has been grown fast by the existing of new television station, the development is shown by the number of national and paid television that increase significantly. This development also followed by the development of transmission system that become more stable. The existing transmission system of Pariz Van Java TV is point-to-point microwave transmission from studio to main transmitter tower. By the far distance, and geographic contour that crossing through the hills, the microwave signal can get disturbance during travel time. Moreover when rainy and bad weather can decrease the signal quality to tower transmitter and the distribution to customers. This problem then encourage PJTV to develop their transmission system to be better and reluctant to rainy and bad weather.

In this final assignment, designed Fiber To The Tower (FTTT) network that used to connect PJTV's studio and main transmitter tower which is located in Panyandaan Relay Station Complex, West Bandung that separate ± 16 km through fiber optic by using existing Metronet network from Indonesia Comnets Plus (ICON+). This fiber optic network replace point-to-point microwave transmission from studio to transmitter tower. In this network design, PJTV's studio connected to the nearest Presence Of Point (POP) Cigereleng GI with a distance of 8.64 km and PJTV's transmitter tower connected to the POP Cimahi Kota APJ with the distance of 7.35 km

From the results obtained design output at PJTV studio to POP Cigerelang GI link with Power Link Budget value is -8.6 dBm, Rise Time Budget value is 0.2567 ns, Signal to Noise Ratio value is 30.9 dB, and the Bit Error Rate value is 9.89×10^{-68} . While the POP Cimahi Kota APJ to the transmitter tower link has the Power Link Budget worth -11.506 dBm, Rise Time Budget worth 0.2567 ns, Signal to Noise worth 27.98 dB, and the Bit Error Rate worth 1.76×10^{-36} . From the output result, it can be concluded that the network links design are eligible to the best standard of the fiber optic network.

Keyword : *FTTT, Fiber optic, TV Studio, Transmitter Tower*