

## **ABSTRACT**

*At Indonesia at this time all operators have been integrated by 4G LTE services, but there are still some areas that have not been reached by the network or have been integrated but the network is still unstable causing bad coverage. Fronthaul is designed to overcome bad coverage by increasing coverage and throughput in bad coverage areas where BBU located at the location of a cell is moved to the central network control location. The placement of the fronthaul link uses a 71 Ghz frequency by viewing bad coverage using the drive test method in the city of North Purwokerto, West Purwokerto and South Purwokerto. The results of determining the bad coverage area are then made site hop based on the existing site closest to the bad coverage area. Increase in RSRP after adding fronthaul RSRP of -91.7 dBm increased by 12% and CINR by 13.95 dB, an increase of 120%. While throughput increased after fronthaul added on average to 90.75 Mbps from 52.12 Mbps the throughput rose 72%. For simulation of 71 Ghz fronthaul microwavelink the receiving power level when it does not rain is as much as the average RSL -27.52 dBm and when it rains RSL drops -58.17 dBm from the minimum threshold of -48 dBm. For reliability, the system gets annual multipath availability at 6 hops of 99.999%, but in annual rain availability the average is 99.90%.*

**Keywords:** *Fronthaul, Bad Coverage, Microwave, Availability*