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Analysis of Microwave Network Design Using Back-to-Back Passive Repeaters with the Influence of Interference Based on ITU-T-G821 Standard

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Abstract—This paper analyzes the microwave network design which uses the back-to-back passive repeaters with the existence of interference. The microwave network design is simulated on Pathloss 5.0 software. The simulated availability results were compared to the ITU-T G.821 standard, and it shows that the simulated availability result which was produced

from the interference affected, back-to-back repeater design, indicates that the availability was not reached the standard, while the other design that uses the back-to-back repeaters which were not affected by interference obtained 99.97403% availability. Although the latter design resulting in a higher availability value compared to the standard, 99.9600%, it is still not fulfilling the path availability standard, which is 99.9800%. The availability result shows that it has fulfilled the ideal condition since the value is above 99,9% and the outage time value is 0,1%. However, the availability result of the budget calculation link of using the back-to-back repeaters network design is 99.98663%, which indicates that the availability value fulfilled the ITU-T G.821 standard.

Index Terms—Microwave, Passive Repeater, Pathloss 5.0, Interference, ITU

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