ABSTRACT

Satellite communication is the choice as a TV transmission media in Indonesia because it has wide coverage area which can cover all regions in Indonesia. However, because of the far distance the communication system is vulnerable to interference, one of them is sun outage. Sun outage on geostationary satellites occurs 2 times in 1 year in March and September. TV communication systems that use satellites as the transmission media will certainly be exposed to solar interference. In this study, search results were carried out on NET TV transmission stations at Banyumas, and how the sun outage can influence it. The research was conducted in 3 sun outage periods, namely March 2017 using TELKOM 1 satellite with 4134 MHz downlink frequency, September 2017 using PALAPA D satellite with 4153 MHz downlink frequency, and March 2018 using PALAPA D satellite with 3751 MHz downlink frequency. The results of the analysis are based on the value of the link budget C/N, margin and BER parameters. The value of the parameter is based on the calculation of the budget link and data from the Sony Ericsson RX8200 receiver. The research data is the value of the link budget C/N parameter, the margin and BER results from the calculation of the link budget and the recipient data results. In the period March 2017 based on the calculation results C/N = 11.9 dB margin = 4.54 dB, and the average results of the receiver C/N = 14.6 dB 9.3 dB. In the September period based on the calculation C/N 10.19 dB margin of 2.83 dB and based on the results of the receiver C/N = 14.1 dB margin of 8.8 dB. In the period March 2018 based on the calculation results C/N = 10.5 dB margin of 3.14 dB and the results of the receiver C/N = 13.1 dB and a margin of 7.7 dB. Whereas for the same BER parameter value for each period is 1.0E-8. The impact of the sun outage causes degradation in C/N, and increase the BER values, then it causes greater error ratio. The biggest impact occurred in the period of March 2017, then September 2017, and the least was the period of March 2018.

Keywords: Sun outage, link budget, TELKOM 1, PALAPA D, C/N, margin and BER.