

ABSTRACT

With the advancement of technology that every time is growing, various technologies such as satellite communication technology that is currently widely used because it can reach areas that are far and also remote. Satellite communication has various types of services, one of which uses Very Small Aperture Terminal (VSAT) type Single Channel per Carrier (SCPC). This VSAT works on C-band with a frequency of 3-6 GHz. The reliability given by the VSAT is also more beneficial and allows covering rural areas than cable networks. For this reason, link budget calculations using the Apstar 6 satellite on the Bogor-Muara Pegah link using VSAT type SCPC. Link budget parameters include calculation of azimuth elevation, antenna gain, Effective Isotropic Radiated Power (EIRP), and Carrier to Noise (C/N). In addition there are problems that arise due to pointing errors that cause Cross Polarization. The resulting gain of Hub antenna is 49.96 dBi and at Remote is 38.14, the Effective Isotropic Radiated Power (EIRP) value is 49.05 dBw on the Hub, azimuth and elevation results for the Hub Station azimuth value = 77.514 °, elevation = 57.29 °, while for the Remote Station parameter a value of azimuth = 86.91 °, elevation of 72.968 °. C/N uplink, downlink and total calculation results for C/N site results: C/N uplink 18.28 dB, downlink C/N 38.82 dB, and total C/N is 18.24 dB with the bandwidth obtained for 0.6144 MHz. In Cross Polarization which results under the ITU R-Rec S 731 standard, the ITU R standard is the result of cross polarization with a minimum of 30 dB, while the Apstar 6 satellite service has a result of 22.59 dB, it is necessary to improve pointing and cross polarization improvements in order to get maximum results. After crosspol improvement, a result of 31.22 dB was obtained where the results had met ITU R. standards.

Keywords: Satellite, VSAT, link budget, Cross Polarization