

ABSTRACT

The growth of telecommunication technology offers ease for society to get telecommunication service fitting their need, but the network boundary makes not everybody can get the telecommunication service like they want. That is why to give a sufficient telecommunication service with limited condition, as an alternative telecommunication network that isolated from PSTN (Public Switched Telephone Network), writer try to optimize satellite technology accessed through VSAT with MCPC (Multi Channel per Carrier).

In this final project explain about optimize from the result. The optimization is started by planning the VSAT network. Parameter of the planning consist of demand estimate, and cost network design. To the optimize, I change the value of FEC, the modulation method, and change the diameter of antenna.

From the result of VSAT network design, with GOS 2 % and 12 channel radio, we needed 3 until 12 BS can fulfill demand in rural area about 500 until 3500 telephone connection with traffic estimation 50 mE. BS snatching radius max 5 km with transmission power 24 dBm. From the result maximum snatching maksimum 3.57 km. from link budget result, percentage bandwidth and power needed 10.8 % and 8.18 %. Signal quality receive through satellite link, with diameter of VSAT 1.8m and power transmit 1.4 watt can fulfill $(C/N)_{req}$ 12.72 dB

The signal quality receive through satelit link C/N total, with VSAT antenna diameter is 2.4 m, with $FEC = 1$, and use QPSK as a modulation method can fulfill $C/N_{req} = 12.72$ that fix BER 10^{-6} , that is 14.69