

## **ABSTRACT**

Dispersion is difference in arrival time of each wavelength that lead to widening of the pulse. Dispersion power penalty is the fiber attenuation caused by chromatic dispersion and modal dispersion. This final project aims to determine the effect of dispersion power penalty associated with the occurrence of dispersion in optical fibers used in Java Backbone Ring in PT. Telkom East Surabaya Network Area.

At this final work the authors obtain the dispersion power penalty by knowing the distance parameter, wavelength, and the data rate used on the java backbone ring in PT. Telkom East Surabaya Area Network as well as the dispersion is measured using the JDSU MTS-8000 Optical Analyzer.

From the result by measurement and calculation, the greatest dispersion power penalty was obtained on the route Rungkut-Darmo is 0.7250344 dB using length of the route 6,56724 Km and the dispersion of 16,21 ps/km.nm. While the smallest value of the dispersion power penalty is on the route Rungkut-Injoko is 0.0280169 dB using length of 3,71109 Km route and dispersion of 5,414 ps/km.nm, but the overall magnitude of the dispersion power penalty is still in good category because all of them lies below 2 dB.

**Keywords : Dispersion, Dispersion *power penalty*, BER**

## KATA PENGANTAR



Assalamu'alaikum Wr. Wb.

Syukur Alhamdulillah penulis panjatkan kepada Allah SWT karena hanya dengan rahmat, hidayah dan inayah-Nya penulis dapat menyelesaikan tugas akhir ini dengan judul **ANALISIS DISPERSI *POWER PENALTY* PADA JAVA BACKBONE RING DI PT. TELKOM INDONESIA AREA NETWORK SURABAYA TIMUR** sebagai persyaratan menempuh sidang Tugas Akhir pada program Sarjana Teknik Telekomunikasi Institut Teknologi Telkom Bandung.

Penulis menyadari bahwa masih banyak kekurangan pada perancangan dan pembuatan buku tugas akhir ini. Oleh karena itu, besar harapan penulis untuk