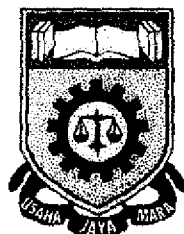


**EVALUATION OF FIBER OPTIC LINKS USING
OPTICAL TIME DOMAIN REFLECTOMETER**

**Thesis presented in partial fulfillment for the award of the
Bachelor of Electrical Engineering (Honours)
UNIVERSITI TEKNOLOGI MARA**



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**In the Name of Allah
Most Gracious Most Merciful**

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ABSTRACT

As the pathway for a communications transmission, fiber optic is the heart of the network, and a primary determinant of system performance. This project paper involved in evaluating Keretapi Tanah Melayu Berhad (KTMB) fiber optic link performance by using Optical Time Domain Reflectometer (OTDR). This instrument is used to obtain a visual representation of an optical fiber's attenuation characteristics along its length. It provides the best representation of overall fiber integrity.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Optical fiber plays an increasingly integral role in the way we live. Telephone, cable television companies, utilities; state and local departments of transportation are deploying fiber at a phenomenal rate.

When considering fiber, it is important to look at the total picture. Factors to consider when projecting network costs are the life of the network, the life of the system, the need to upgrade the system for future capacity requirements, and the possibility of generating revenue by leasing reserve capacity to other carriers.

Compared with copper twisted pair, optical communications systems exhibit a much lower bit error rate (BER) while operating at much higher data rates. As a result, data transmission is both faster and more reliable over optical fiber systems. In fact, optical fiber technology is constantly undergoing changes and improvements by preventing disruption and additional expense when it is time to upgrade. Also, optical fiber may not be "hardware-dependent" which means fiber systems can be upgraded, as new transmission technologies become available.