

# **THE PERFORMANCE OF THE FIBER OPTIC LINKS SYSTEM**

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**In the Name of Allah  
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## **ABSTRACT**

Fiber optic has become the method of choice for telecommunications because of the advantages and ease in which system can be used. Choosing the correct fiber type is one of the most important procedure in desingning any optical fibers link system. This project involved in evaluating the performance of the fiber optic cable using a simulation program created using the Visual Basic (VB) software package. The characteristics evaluated include dispersion, attenuation, bandwidth, bit rate and data rate

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# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

Telecommunications using glass fibers as the transmission media is now a major industry. Manufacturing plants devoted exclusively to fabricating optical fibers and cables are making several million kilometers of telecommunications fiber annually, which is capable of supplying fiber for a super-abundance of transmission facilities.

In this decades, the world will change due to fiber optic technology. The impact of fiber optics has already been felt in telephone communications, but the average homeowner could see an explosion of offerings, from home grocery shopping to current movies played in the home.

Compared with the other transmission media such as copper, twisted pair and coaxial cable, the fiber optic cables have some advantages in the telecommunication as the transmission link system. A fiber optic cable offers greater bandwidth, smaller size, signal confinement, freedom from electromagnetic pulses, low cost and security in the communication system.

Since the fiber optic cable has become the method of choice for telecommunications because of the advantages, it is important to look the some characteristic which belongs to the fiber optic cable itself. When considering the fiber optic cable, there are some characteristic such as dispersion , attenuation , bandwidth, bit rate and data rate that should be considered in any fiber optic link system which applied the fiber optic cable as the transmission media that affect the performance of the optical fiber cable itself and also the system.