

**WIRELESS LOCAL AREA NETWORKS:
A STUDY OF BIT ERROR RATE (BER),
MODULATION TYPE AND SIGNAL SPEED.**

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ABSTRACT

This project covers two main parts. The first part covers an in-depth study on wireless local area networks (WLANs) which covers its benefits, applications, protocols, adaptations and feasibility. The second part of the project is a study of a wireless point-to-point communication LAN network using two sets of walkie-talkie as a mode to transmit the data wirelessly from a personal computer to another via modems. The performance of the transmission is studied in terms of bit error rate (BER), modulation type and signal speed.

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CHAPTER 1 INTRODUCTION TO LOCAL AREA NETWORKS

The use of local area networks in business organizations has seen incredible growth since 1988. LANs can be found in almost every size and type of organization, and they provide the computing power for everything from occasional printer sharing to running the business-crucial operational and financial systems.

At least part of the reason for this growth is that the task of interconnecting computers has become far easier. In the past, installing a network and getting it to work successfully required two parts good luck and one part magic. Today, network interfaces are much more easier to install and configure, (i.e., to set up so that they function correctly with their host computer and its software). Network interfaces also are more cooperative about "talking" to each other, even between hardware from different manufacturers. As a result, setting up a LAN is now a largely straightfoward task.

Lower network costs also have contributed to LAN growth. The previous high cost of network components limited the availability of connections to those with very specific business needs (for example, access to an expensive disk storage device or high-speed printer). However, the price of network components has dropped dramatically, while the number and level of services they enable has greatly increased. This made it far more affordable, and therefore, more cost-justifiable, to connect most or all of the personal computers within a department or an office. Once connected, users can take advantage of simple functions like sharing disk space or laser printer. Connection to the LAN also allows them to share files, exchange electronic mail, arrange scheduling, and collaborate on group projects.

But one of the biggest reasons for the growth of LANs is that they can make good business sense. A LAN provides impressive levels of computing capacity at lower costs and with greater flexibility, when compared to traditional mainframe computing