

FREQUENCY SHIFT KEYING MODEM SYSTEM

The thesis is presented to fulfil the requirement of Advanced Diploma in Electrical Engineering of MARA Institute of Technology

HANIM BT. AMIN
DIP. ELECTRICAL ENGINEERING (ELECTRONIC), ITM

FADHILAH BT. KASSIM
DIP. ELECTRICAL ENGINEERING (POWER), (UTM)

NOVEMBER, 1993

Department of Electrical Engineering
School of Engineering
MARA Institute of Technology
40450 Shah Alam
Selangor
MALAYSIA

ACKNOWLEDGEMENTS

We would like to take this opportunity to express our sincere gratitude to Puan Rusnani Ariffin, our advisor for her patient guidance and valuable suggestions throughout the preparation of this report.

We also indebted to those who had willingly extended their help to us either directly or indirectly to make the project successful especially to the laboratory technician, Mohd. Aini.

Abstract

A modulator-demodulator (MODEM) is used to encode and decode digital pulses into audio tones which can be transmitted over telephone lines. In our project, Frequency Shift Keying (FSK) is used for the process of modulation and demodulation. FSK is one of the most common form of modulation schemes in digital communication in use with telephone line transmission. When a voice channel is used for transmitting digital information, the form of modulation must be compatible with the characteristic of the voice channel.

The data input to the modem is converted into audio frequency signals which are coupled into the Public Switching Telephone Network (PSTN). Since our project was applying Bell 103 Modem, the system operated at the rates of 300 Bauds. Using FSK, the modem transmits data with a 1070 Hz tone for a '0' (space) and 1270 Hz tone for a '1' (mark) in one direction and a 2025 Hz tone for a '0' and 2225 Hz tone for a '1' in the reverse direction. Since data can be sent in both directions between two modems simultaneously, the modem is said to be full-duplex mode.

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1.0 INTRODUCTION

1.1 MODEM

The connection between a data communication device and the Public Switching Telephone Network (PSTN) requires a device called modem. A modem is an acronym for modulator-demodulator. It converts digital data signals to suitable audio signals at the transmitter, and the process referred to as modulation; while it converts the audio signals back into digital data signals at the receiver end, commonly referred to as demodulation. Therefore modem was used to send and receive digital data.

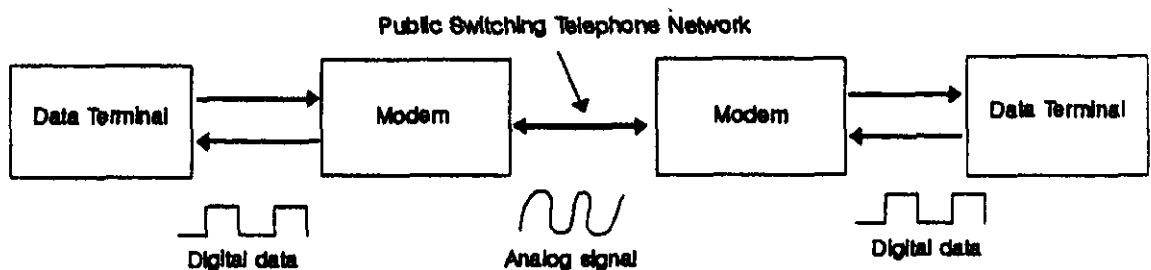


Figure 1.1. Data communication using Modem

Figure 1.1 shows a general system where equipments are often used for communication with other data terminal, via telephone lines. The computer terminal user calls the other computer terminal through telephone and uses the telephone connection for data communication. To accomplish this,