MODEM

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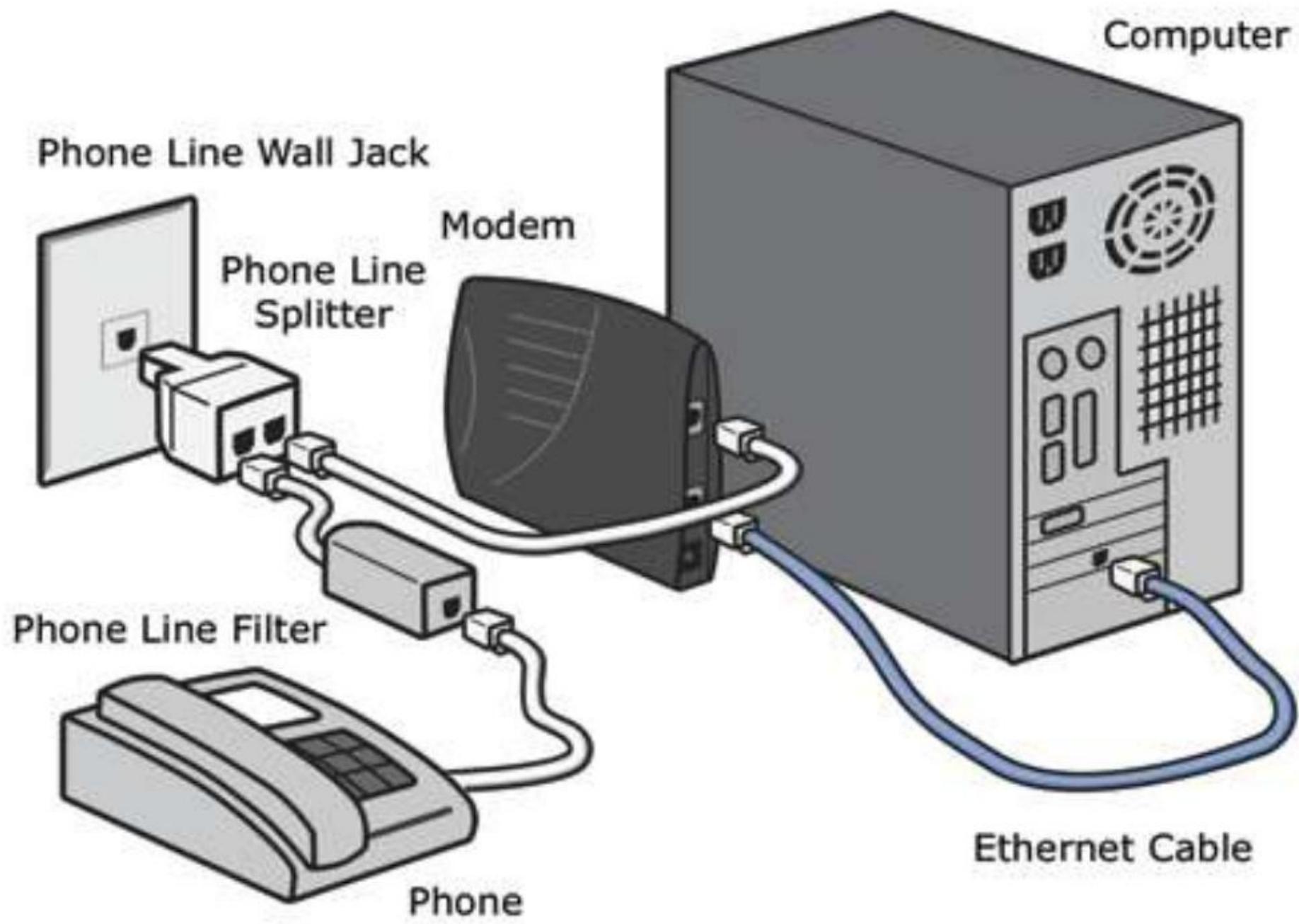
Modem Security

INTRODUCTION

- A modem (modulator-demodulator) is a device that modulates an analog carrier signal to encode digital information, and also demodulates such a carrier signal to decode the transmitted information.

- The goal is to produce a signal that can be transmitted easily and decoded to reproduce the original digital data.

- Modems can be used over any means of transmitting analog signals, from light emitting diodes to radio.

- Modems are generally classified by the amount of data they can send in a given unit of time, usually expressed in bits per second (bit/s, or bps).
- The most familiar example is a voice band modem that turns the digital data of a personal computer into modulated electrical signals in the voice frequency range of a telephone channel.
- These signals can be transmitted over telephone lines and demodulated by another modem at the receiver side to recover the digital data.

- The modem (an acronym composed of the words modulator and demodulator) is a device used in communication systems for the physical interface of an information signal with the medium of its propagation, where it can not exist without adaptation.

The modem performs the function of the terminal equipment of the communication line. The very formation of data for the transmission and processing of received data carries out the so-called. terminal equipment (in its role can act and a personal computer).

Phone Line Wall Jack

Phone Line Splitter

Modem

Computer

Phone Line Filter

Phone

Ethernet Cable

History

- IN 1920 used as multiplex equipment In 1958 used in airdefense system In 1960 the name Data-Phone was introduced In 1962 The famous Bell 103A dataset standard was also introduced by AT&T

First modem: Manufacturer - AT & T, production date - 1958

The first commercial modem Bell 103, operates at a speed of 300 baud.

WHAT IS MODEM.?

- Modem, short for modulator-demodulator is an electronic device that converts a computer's digital signals into specific frequencies to travel over telephone or cable television lines. At the destination, the receiving modem demodulates the frequencies back into digital data. Computers use modems to communicate with one another over a network.

Types of computer modems

- External
- Intelligent
- Short-Haul
- Wireless
- Standard
- Internal

- External Modem: This is a modem separated from the system unit in the computer case. It is connected to the serial port of the computer by means of a cable. It is connected to the telephone wall jack by another cable.

- Internal Modem: An internal modem is a circuit board (a modem card) that can be added to the system unit of the computer. It takes one of the expansion slots.

- Intelligent Modems: Intelligent modems are also called advanced modems. These modems can accept new instructions and then respond to the commands while transmitting data and information.

- Standard Modems: Most modems used today are called standard modems. These modems are usually operated by commands entered from a microcomputer keyboard.

- Short- haul modems are devices that transmit signals down the cable through any COM1 port.

- Wireless Modems: Wireless modems transmit the data signals through the air instead of by using a cable. They sometimes are called a radiofrequency modem. oving.

By type of network and connection

Modems for telephone lines:

Modems for switched telephone lines are the most common type of modems in the XX century and 2000s. Use dial-up remote access.

ISDN - modems for digital switched telephone lines.

DSL - are used for the organization of dedicated (non-switched) lines by means of an ordinary telephone network.

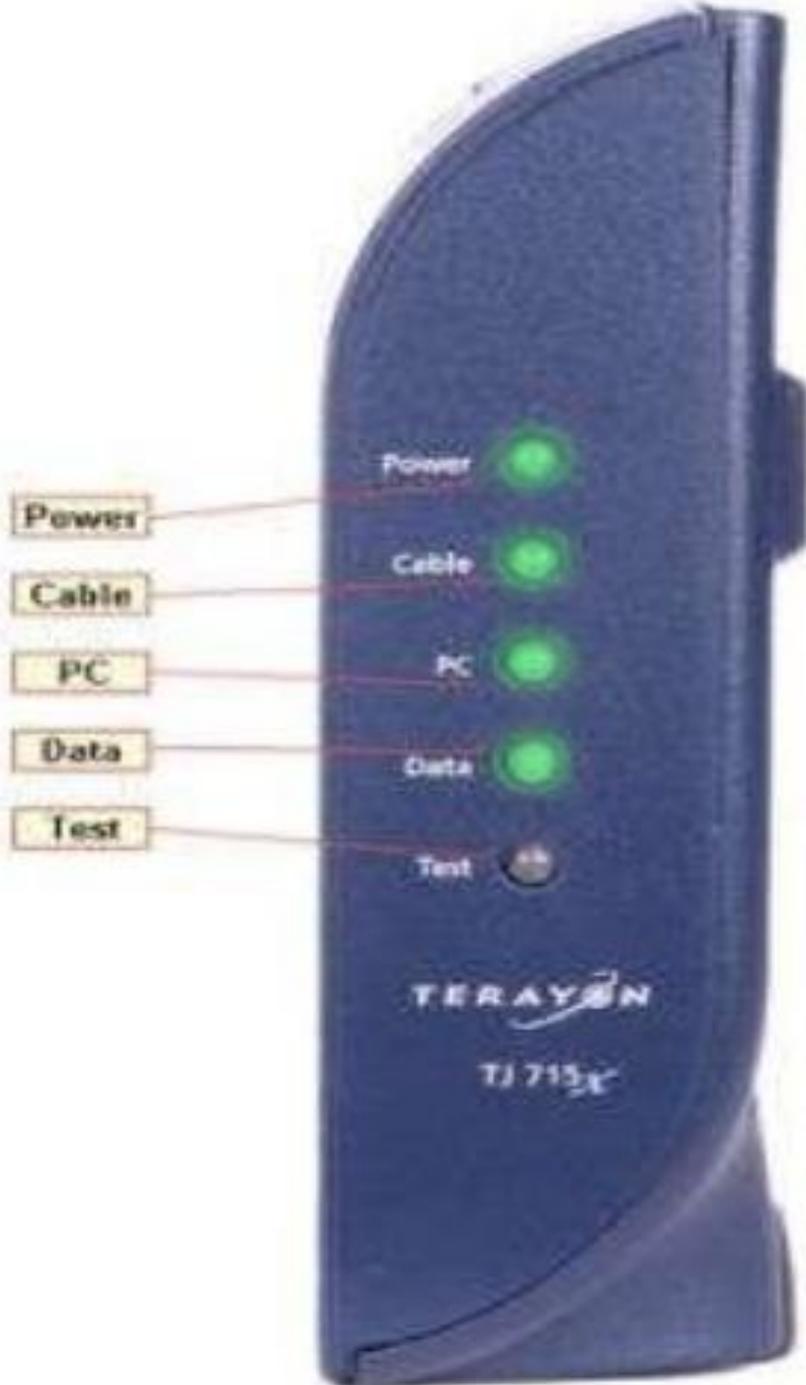Cable modems - used to exchange data on specialized cables.

Radio modems - work in the radio range, use their own frequency sets and protocols:

Wireless modems - work on the protocols of cellular communication (GPRS, EDGE, 3G, LTE) or Wi-Fi. Often have performances in the form of a USB key fob. .

Satellite modems - used to transmit data through a radio channel with retransmission via artificial satellites.

PowerLine-modems (standard HomePlug) - use the technology of transmissions

What is Modems purpose ?

The word modem is an acronym for Modulator-Demodulator. Basically, a modem is used for transmitting and receiving data over a communication channel, such as twisted-pair telephone lines, coaxial cables, and optical fibers.

Currently the purpose of a modem is to convert a computer's data stream to analog format so that it can be transmitted over the analog telephone line. At the source, modulation techniques are used to convert digital data (0's and 1's) into analog form for transmission across the channel. At the destination, the received analog signal is converted to digital data via demodulation.

This is a simplified explanation of how a modem works, and there are other issues that require attention; such as channel impairments, encryption, error detection/correction, data compression, modulation, handshake negotiation, and echo cancellation. These features will be discussed a bit later.

- FUNCTION OF MODEMS
  - Error Correction
  - Compressing the Data
  - Flow Control

Modem Security

- Modem security can be an issue for some people, especially if they leave their modems on for a continuous connection to the Internet. However, many modems have built-in security software to protect your home computer from invasion. Using a router will enhance your security, as will shifting to a less popular but highly secure operating system like Linux.

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