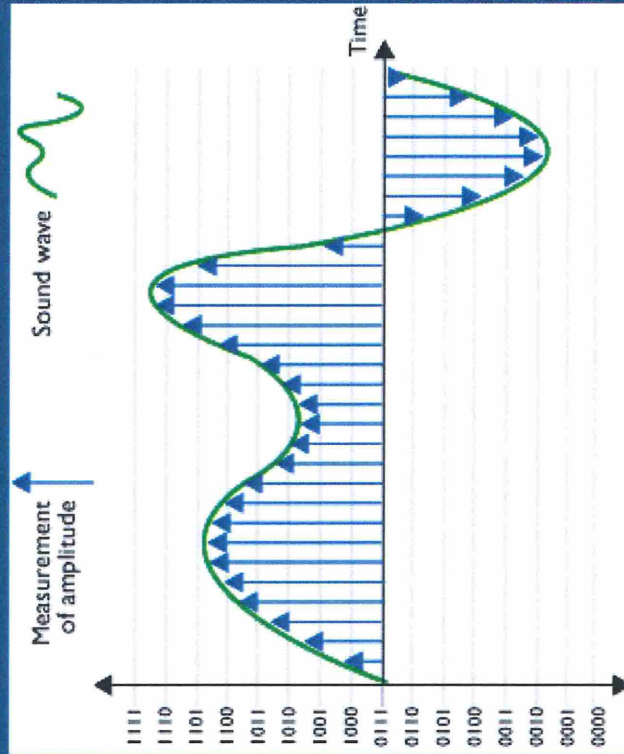
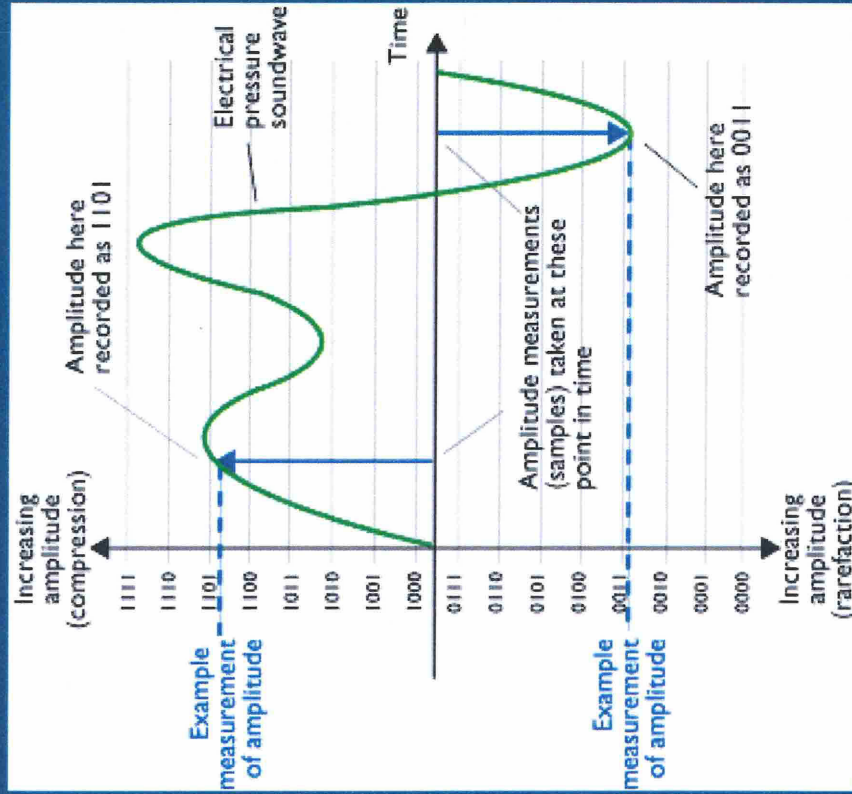


DIGITAL AUDIO MUSIC



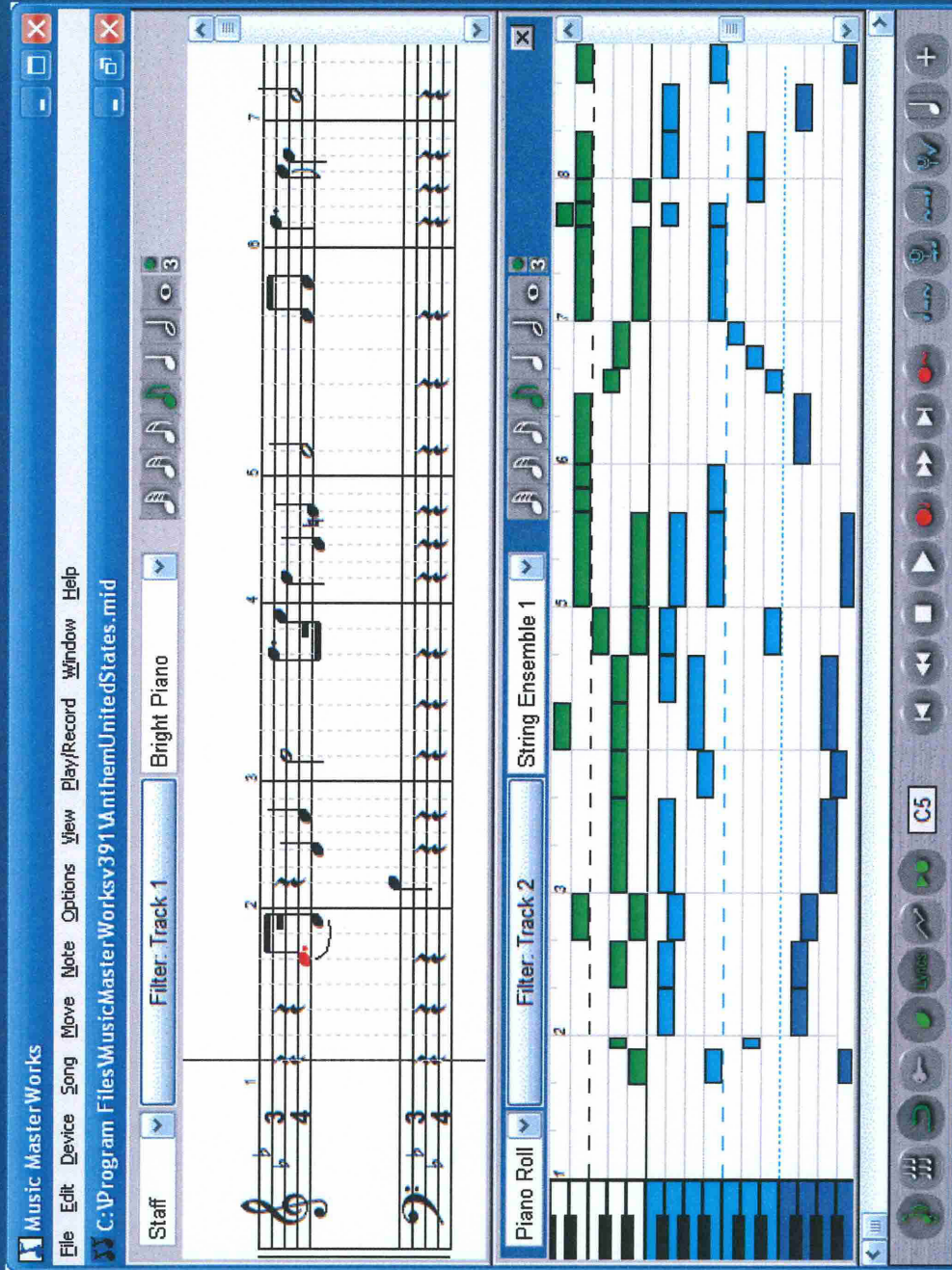
Each measurement is assigned a number (byte) according to its amplitude. The end result is a file comprising a string of bytes, eg ...
 1001 1110 0001 1010 0111 0100 1111 1101 etc



DIGITAL AUDIO VS. SHEET MUSIC

- Sheet music provides a set of instructions to an artist to read and perform
- MIDI (Musical Instrument Digital Interface)
 - *Electronic sheet music*
 - *Stores instructions, as opposed to raw audio data*
 - Reflected in file size differences (KB vs. MB)
 - *Reliance on tones stored on playback computer*
 - i.e., playback computer is the artist
 - *Cannot accurately capture artist vocals*
 - *MIDI is not created by converting analog sound waves, it is an all digital creation of notes to play.*

DIGITAL AUDIO VS. SHEET MUSIC



DIGITAL AUDIO VS. SHEET MUSIC

SALES AND DISTRIBUTION: Prior to final purchase, hardware units need to be physically transferred from the manufacturing facility to the wholesale warehouse to & the retail warehouse to the retail outlet, resulting in lengthy, lag time between music creation and music marketing, as well as incurring unnecessary and inefficient transfer and handling costs. Additionally,

Accordingly, it is an objective of this invention is to provide a new and improved methodology/system to electronically sell and distribute Digital Audio Music.

METHOD FOR TRANSFER OF DIGITAL VIDEO Cassettes
This is a continuation of U.S. Pat. No. 6,070,407 filed on the same date as the present application.

FIELD OF THE INVENTION
The present invention is directed to the field of electronic data transfer and distribution, and more particularly to the field of digital audio and video data transfer and distribution from any location which is connected to a communication line.

BACKGROUND OF THE INVENTION
The three basic transmission methods for the transfer of data are: (1) serial transmission; (2) parallel transmission; and (3) optical transmission.

DESCRIPTION OF THE INVENTION
The present invention is directed to the field of electronic data transfer and distribution, and more particularly to the field of digital audio and video data transfer and distribution from any location which is connected to a communication line.

OBJECTS AND ADVANTAGES
The objects and advantages of the present invention will be apparent from the following description taken in connection with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS
FIG. 1 is a block diagram of the present invention showing the flow of data from a manufacturing facility to a wholesale warehouse to a retail outlet.

DETAILED DESCRIPTION OF THE INVENTION
The present invention is directed to the field of electronic data transfer and distribution, and more particularly to the field of digital audio and video data transfer and distribution from any location which is connected to a communication line.

CLAIMS
What is claimed is:
1. A method for the transfer of digital audio and video data from a manufacturing facility to a wholesale warehouse to a retail outlet, comprising the steps of:

(a) creating digital audio and video data at the manufacturing facility;
(b) transferring the digital audio and video data to a wholesale warehouse;
(c) transferring the digital audio and video data from the wholesale warehouse to a retail outlet.

2. The method of claim 1, wherein the digital audio and video data is transferred from the manufacturing facility to the wholesale warehouse via a communication line.

3. The method of claim 1, wherein the digital audio and video data is transferred from the wholesale warehouse to the retail outlet via a communication line.

4. The method of claim 1, wherein the digital audio and video data is transferred from the manufacturing facility to the retail outlet via a communication line.

5. The method of claim 1, wherein the digital audio and video data is transferred from the manufacturing facility to the wholesale warehouse via a communication line, and from the wholesale warehouse to the retail outlet via a communication line.

6. The method of claim 1, wherein the digital audio and video data is transferred from the manufacturing facility to the wholesale warehouse via a communication line, and from the wholesale warehouse to the retail outlet via a communication line, and the communication line is a telephone line.

7. The method of claim 1, wherein the digital audio and video data is transferred from the manufacturing facility to the wholesale warehouse via a communication line, and from the wholesale warehouse to the retail outlet via a communication line, and the communication line is a cable television line.

'573 patent at col. 1:39-43, 2:10-12

DIGITAL AUDIO VS. SHEET MUSIC

MIDI



Elvis Presley, “Can’t Help Falling In Love” (1961)

DIGITAL AUDIO VS. SHEET MUSIC

DIGITAL AUDIO



Elvis Presley, “Can’t Help Falling In Love” (1961)

System to Transmit Digital Signals

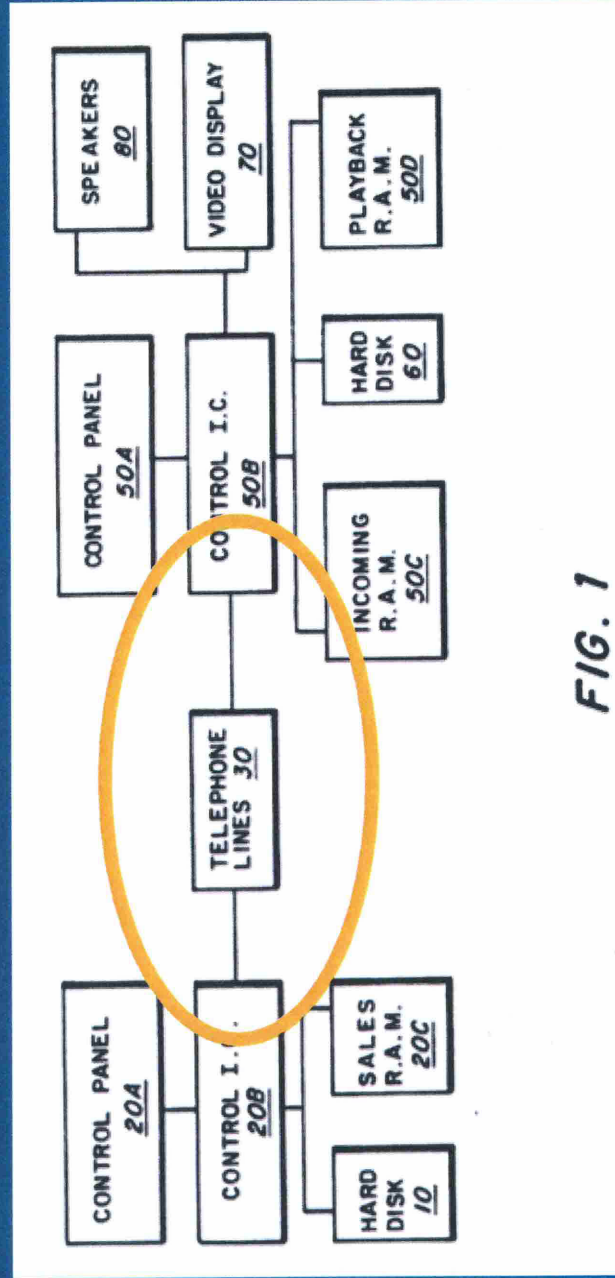
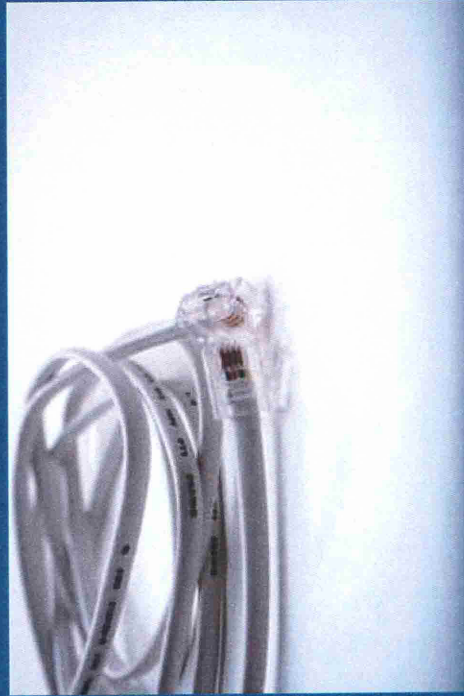


FIG. 1

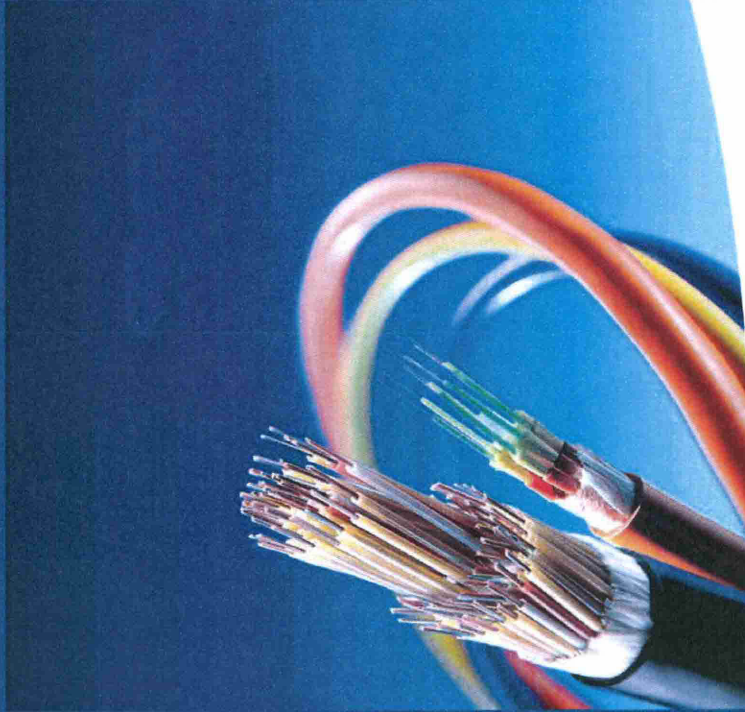
Copper Wire

- Metal-based
- By 1988, was part of the backbone of telephone networks, e.g., “last mile”
- Provides for an electrical conduction path




Fiber Optics

- Composed of Fibers
- Data communication utilizing light/photons
- By 1988, utilized in phone networks, e.g., long-distance calls.



Fiber Optics

- 1977 – AT&T utilized fiber optics in their telephone networks
- 1987 – AT&T, British Telecom laid down TAT-8 fiber optic cables to facilitate long-distance telephone communications

 Enterprise

AT&T Labs
About AT&T Labs
In Development
In Research
Products & Services
Tech Showcase
Technology Timeline

1900's
1910's
1920's
1930's
1940's
1950's
1960's
1970's

1977: Fiber Optic Communication

AT&T Bell Labs scientists became interested in lightwave communication in the mid-1960s, when it became apparent that lightwaves had an enormous capacity for carrying information and were immune from electrical interference. Advances in lasers, light-emitting diodes, repeaters, connectors, photoreceptors and glass fibers in the following decades - and the realization that they could be fabricated and integrated on a single chip - paved the way for the development of the first lightwave system in an operating telephone company in 1977.

The installation was the world's first lightwave system to provide a full range of telecommunications service - voice, data, and video - over a public switched network. The system, extending about 1.5 miles under downtown Chicago, used glass fibers that each carried the equivalent of 672 voice channels.

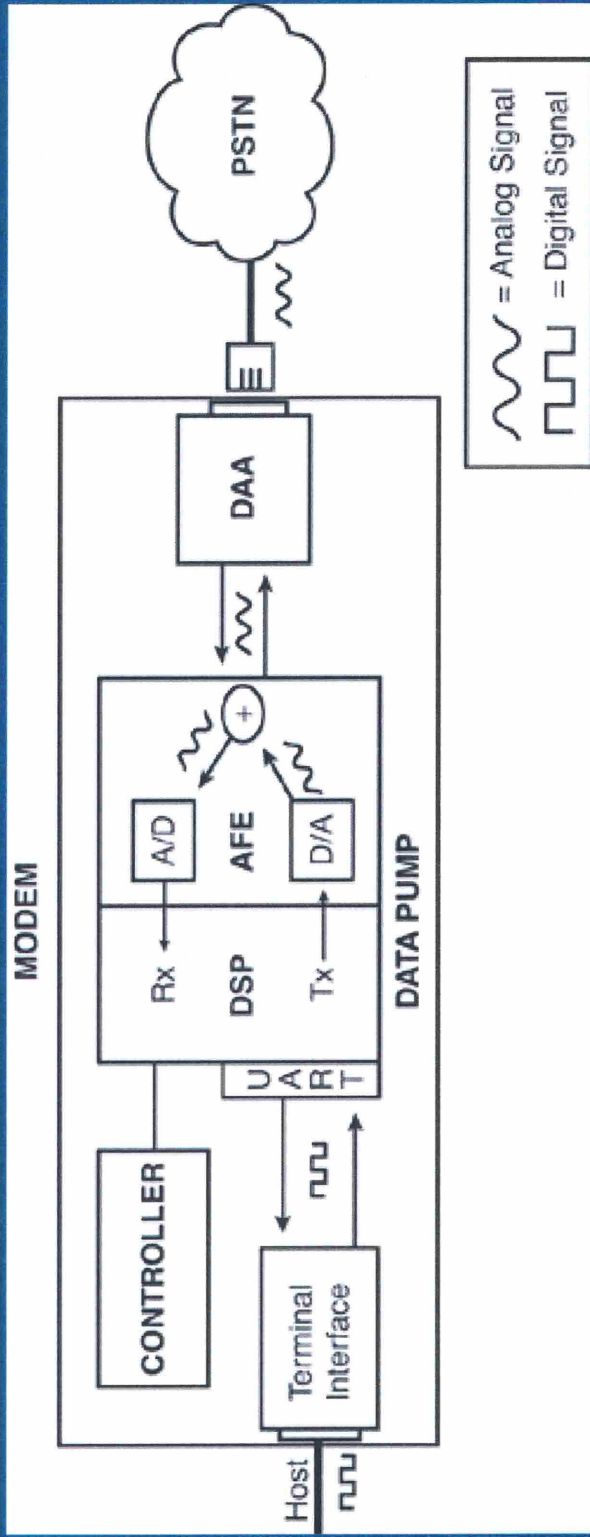


Wireless / Cellular

- Radiowaves / microwaves
- Antenna transmission from devices utilizes electricity

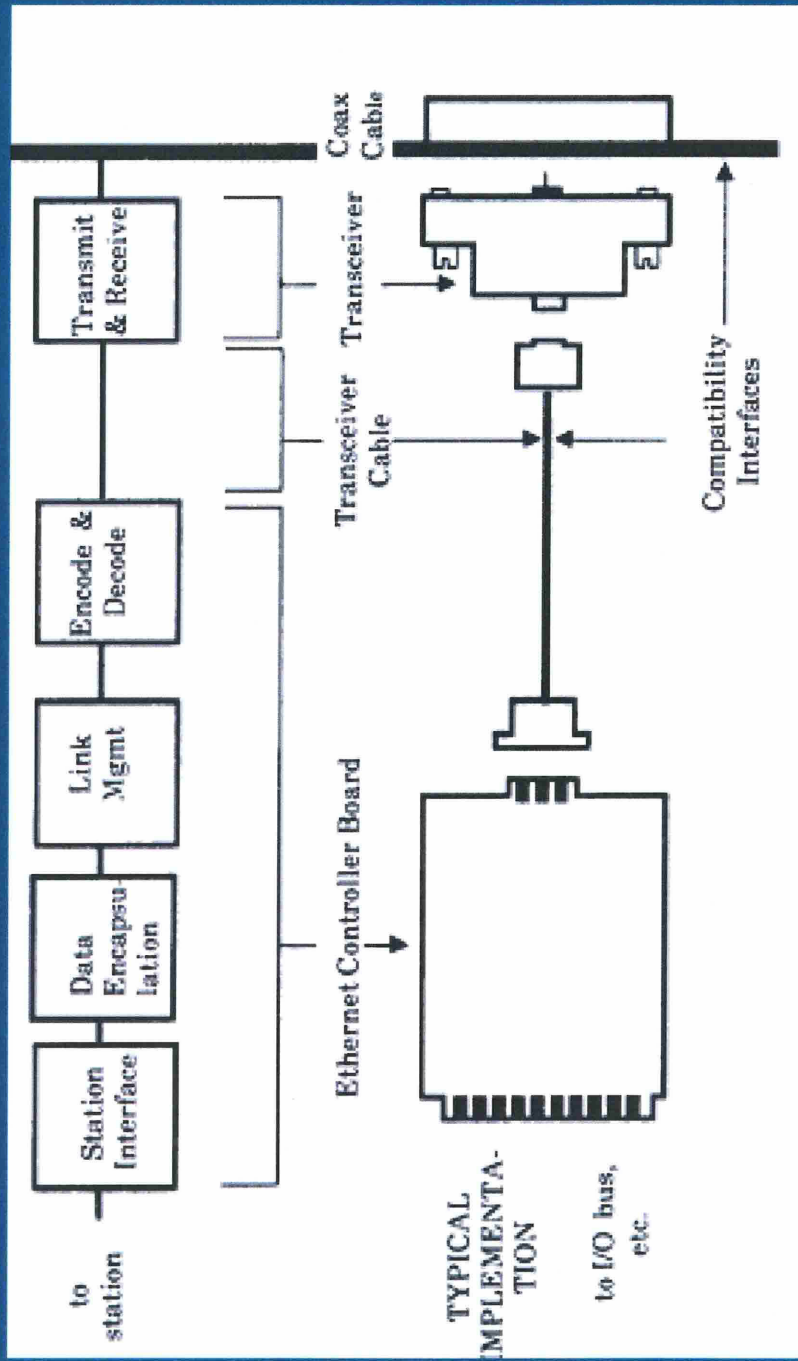


Connecting / Transmitting



- Modem converts digital signals from a computer to an analog signal s to be sent across copper wires as used in phone systems
- Computer bytes are converted to bits by a (transmitter/receiver)
 - “A” = 97 (decimal) = 01100001 (binary)
- Bits are represented in tones (Hz)

Connecting / Transmitting



The Ethernet, 1982

System to Transmit Digital Signals

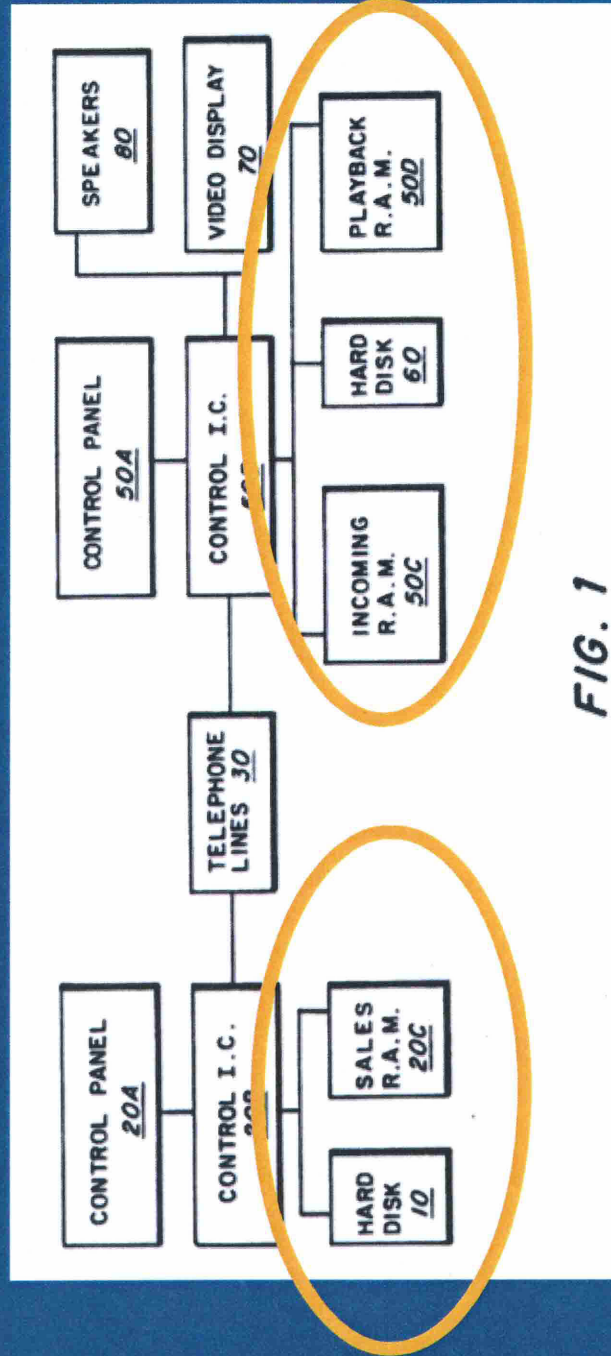


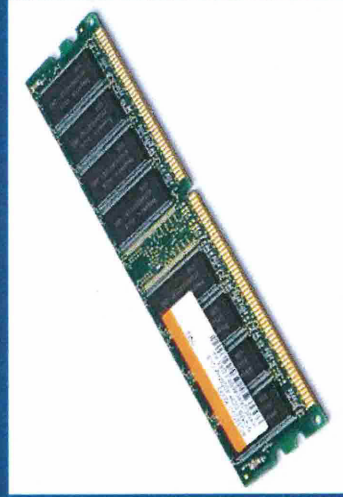
FIG. 1

STORAGE

- Volatile Memory
- Non-volatile memory

Volatile Memory: RAM

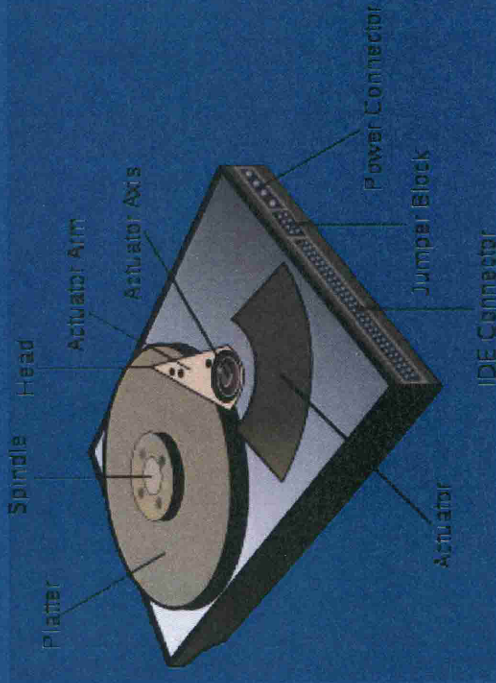
- Random Access Memory



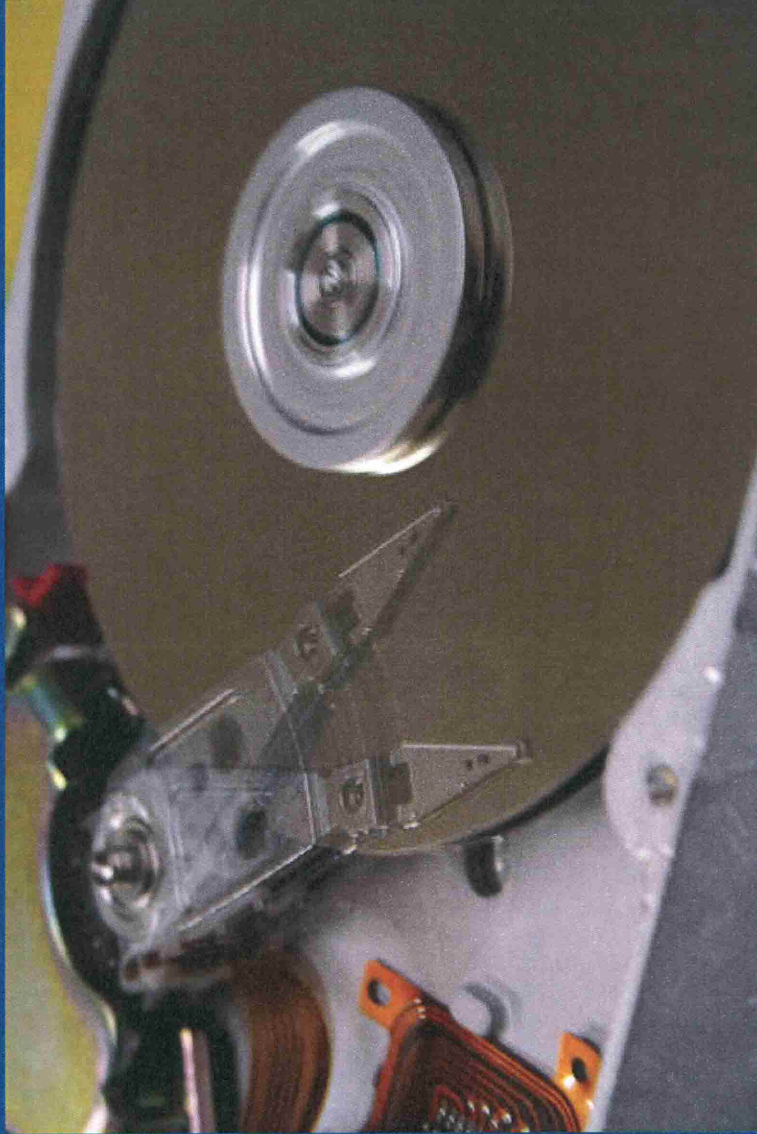
- Composed of integrated circuits (transistors)
- Loss of contents or state when power is removed
- Consistent access time for different locations

Non-volatile Memory

- Retain information even when power is removed
- Long-term persistent secondary storage
- Hard Disks
 - Rotating disk
 - Movable actuator arm
 - Read/write head
- Solid State Drives
 - Integrated circuits
 - Less susceptible to physical shock
 - Faster access
 - Quieter



Non-volatile Memory: Hard Drives



Non-volatile Memory: Hard Drives

- Solid State Drives are non-volatile and use NAND-based flash memory



NEW ULTRA HIGH DENSITY EPROM AND FLASH EPROM WITH NAND STRUCTURE CELL

KEIICHI NISHIDA, HAJIME NISHIZUMI, TOSIYUKI TAKEDA AND RICHIEO HIRATA
VLSI Research Center, Toshiba Corporation
1, Esakashi, Kawasaki, Kanagawa, 210 JAPAN

ABSTRACT

The new NAND structure cell is a new type of non-volatile memory cell. It is based on the NAND structure cell technology, which has been widely used in NAND flash memory. The new NAND structure cell is a high density non-volatile memory cell. It is suitable for use in high density non-volatile memory devices. The new NAND structure cell is a high density non-volatile memory cell. It is suitable for use in high density non-volatile memory devices.

INTRODUCTION

The new NAND structure cell is a new type of non-volatile memory cell. It is based on the NAND structure cell technology, which has been widely used in NAND flash memory. The new NAND structure cell is a high density non-volatile memory cell. It is suitable for use in high density non-volatile memory devices.

DESCRIPTION OF OPERATION

The new NAND structure cell is a high density non-volatile memory cell. It is suitable for use in high density non-volatile memory devices.

VLSI Research Center, Toshiba Corporation

programmed selectively. This high performance NAND structure cell is applicable to high density nonvolatile memories as large as 8M bit EPROM and Flash-EEPROM or beyond.

Storing in Memory

