**PARTS OF A COMPUTER**

We know that computer consists of various physical components known as hardware devices. Let us now see about some of the basic parts of a computer system.

**CPU(Central Processing Unit)**

  
The central processing unit or the ***microprocessor*** is the core of the computer. It has the electronic circuitry to process the input data to get the required information. It is the processor which executes the instructions.

Another component known as ***'Random Access Memory'(RAM)*** resides inside this unit and it stores the data that the CPU uses for processing. But this memory is volatile which means that the data will be erased once the computer is switched off.

**Mouse**

  
A mouse is a small device used to point to and select items on your computer screen.

A mouse usually has two buttons: a primary button (usually the left button) and a secondary button. Many mice also have a wheel between the two buttons which enables smooth scrolling.

When you move the mouse with your hand, a pointer on your screen moves in the same direction. When you want to select an item, you point to the item and then click (press and release) the primary button. Pointing and clicking with your mouse is the main way to interact with your computer. We'll see more about using the mouse in a later chapter.

**Keyboard**

Keyboard  
A keyboard is used for typing the text. Apart from letters and numbers, it has some special keys too. The top row contains the ***'function keys'*** for different functions. On the right side of the keyboard, we see the ***'Numeric Keypad'*** which is used to enter numbers quickly. Arrow keys known as the ***'Navigation Keys'*** allows easy navigation through the page.

**Monitor**

  
A monitor displays the information for the user to view them. The information could be in text or graphical form. The area in which the information is displayed is called the screen.

There are basically two types of monitors viz., CRT Monitors and LCD Monitors. The LCD monitors are being widely used these days.

**Storage**

Disk Drives are storage devices that store information and preserves it even when the computer is switched off.

**Hard Disk**

  
Hard Disk Drive stores information on a hard disk with a magnetic surface. It is normally inside the system unit. In most of the systems, the hard disk acts as the primary storage, storing almost all the program files and other data. Hard disks can store massive amount of information depending upon their configuration.

**CD/DVD Drive**

  
Most of the computers today come with a CD/DVD Drive which is located on the front side of the CPU Box. CD drives use lasers to read data from a CD, and if it is a writable CD drive, you can also write data onto CDs.

DVD Drives are similar to CD Drive, except that the amount of data that a DVD can hold is much much more than a CD.

**Floppy Disk Drives**

  
Floppy disk drives store information on floppy disks. floppy disks can store only a small amount of data. Moreover, they retrieve information very slowly and are more prone to damage. For these reasons, floppy disk drives are less popular than they used to be once.

[**Random Access Memory**](http://ecomputernotes.com/fundamental/input-output-and-memory/what-are-the-different-types-of-ram-explain-in-detail) ([**RAM**](http://ecomputernotes.com/fundamental/input-output-and-memory/what-are-the-different-types-of-ram-explain-in-detail)) is the best known form of C*omputer Memory*. The Read and write (R/W)[memory](http://ecomputernotes.com/fundamental/input-output-and-memory/what-are-the-different-types-of-ram-explain-in-detail" \o "Random Access Memory (RAM) is the best known form of Computer Memory" \t "_self) of a [computer](http://ecomputernotes.com/fundamental/introduction-to-computer/what-is-computer) is called RAM. The User can write information to it and read information from it.With Ram any location can be reached in a fixed ( and short) amount of time after specifying its address.

The RAM is a volatile memory, it means information written to it can be accessed as long as power is on. As soon as the power is off, it can not be accessed. so this mean RAM computer memory essentially empty.RAM holds data and processing instructions temporarily until the [CPU](http://ecomputernotes.com/fundamental/introduction-to-computer/what-is-cpu) needs it.

RAM is considered “**random access**” because you can access any memory cell directly if you know the row and column that intersect at that cell. RAM is made in electronic chips made of so called semiconductor material, just like processors and many other types of chips. In RAM, transistors make up the individual storage cells which can each “remember” an amount of data, for example, 1 or 4 bits – as long as the [PC](http://ecomputernotes.com/fundamental/introduction-to-computer/personal-computer) is switched on. Physically, RAM consists of small electronic chips which are mounted in modules (small printed circuit boards). The modules are installed in the PC’s motherboard using sockets – there are typically 2, 3 or 4 of these.

**There are two basic types of RAM :**

(i) Dynamic Ram

(ii) Static RAM

Dynamic RAM : loses its stored information in a very short time (for milli sec.) even when power supply is on. D-RAM’s are cheaper & lower.

Similar to a microprocessor chip is an Integrated Circuit (IC) made of millions of transistors and capacitors.

In the most common form of computer memory, Dynamic Memory Cell, represents a single bit of data. The capacitor holds the bit of information – a 0 or a 1. The transistor acts as a switch that lets the control circuitry on the memory chip read the capacitor or change its state. A capacitor is like a small bucket that is able to store electrons. To store a 1 in the memory cell, the bucket is filled with electrons.

To store a 0, it is emptied. The problem with the capacitor’s bucket is that it has a leak. In a matter of a few milliseconds a full bucket becomes empty. Therefore, for dynamic memory to work, either the CPU or the Memory Controller has to come along and recharge all of the capacitors holding it before they discharge. To do this, the memory controller reads the memory and then writes it right back. This refresh operation happens automatically thousands of times per second.

This refresh operation is where dynamic RAM gets its name. Dynamic RAM has to be dynamically refreshed all of the time or it forgets what it is holding. The downside of all of this refreshing is that it takes time and slows down the memory.

Static RAM uses a completely different technology. S-RAM retains stored information only as long as the power supply is on. Static RAM’s are costlier and consume more power. They have higher speed than D-RAMs. They store information in Hip-Hope.

In static RAM, a form of flipflop holds each bit of memory. A flip-flop for a memory cell takes four or six transistors along with some wiring, but never has to be refreshed. This makes static RAM significantly faster than dynamic RAM. However, because it has more parts, a static memory cell takes up a lot more space on a chip than a dynamic memory cell. Therefore, you get less memory per chip, and that makes static RAM a lot more expensive. Static RAM is fast and expensive, and dynamic RAM is less expensive and slower. Static RAM is used to create the CPU’s speedsensitive cache, while dynamic RAM forms the larger system RAM space.

**Some other RAMS are :**

**(a) EDO (Extended Data Output) RAM :** In an EDO RAMs, any memory location can be accessed. Stores 256 bytes of data information into latches. The latches hold next 256 bytes of information so that in most programs, which are sequentially executed, the data are available without wait states.

**(b) SDRAM (Synchronous DRAMS)**, SGRAMs (Synchronous Graphic RAMs) These RAM chips use the same clock rate as CPUuses. They transfer data when the CPU expects them to be ready.

**(c) DDR-SDRAM (Double Data Rate – SDRAM) :** This RAM transfers data on both edges of the clock. Therefore the transfer rate of the data becomes doubles.

[**ROM**](http://ecomputernotes.com/fundamental/input-output-and-memory/explain-read-only-memory-what-are-the-types-of-rom)**:** Read only memory: Its non volatile memory, ie, the information stored in it, is not lost even if the power supply goes off. It’s used for the permanent storage of information. It also posses random access property. Information can not be written into a ROM by the users/programmers. In other words the contents of ROMs are decided by the manufactures.

**The following types of ROMs an listed below :**

**(i) PROM :** It’s programmable ROM. Its contents are decided by the user. The user can store permanent programs, data etc in a PROM. The data is fed into it using a PROM programs.

**(ii) EPROM :** An EPROM is an erasable PROM. The stored data in EPROM’s can be erased by exposing it to UV light for about 20 min. It’s not easy to erase it because the EPROM IC has to be removed from the computer and exposed to UV light. The entire data is erased and not selected portions by the user. EPROM’s are cheap and reliable.

**(iii) EEPROM (Electrically Erasable PROM) :** The chip can be erased & reprogrammed on the board easily byte by byte. It can be erased with in a few milliseconds. There is a limit on the number of times the EEPROM’s can be reprogrammed, i.e.; usually around 10,000 times.

**Flash Memory :** Its an electrically erasable & programmable permanent type memory. It uses one transistor memory all resulting in high packing density, low power consumption, lower cost & higher reliability. Its used in all power, digital cameras, MP3 players etc.

**SUPERCOMPUTERS**

A supercomputer is the fastest type of computer. Supercomputers are very expensive and are employed for specialized applications that require large amounts of mathematical calculations. The chief difference between a supercomputer and a mainframe is that a supercomputer channels all its power into executing a few programs as fast as possible, whereas a mainframe uses its power to execute many programs concurrently.

**Some Common Uses of Supercomputers**

Supercomputers are used for highly calculation-intensive tasks such as problems involving quantum mechanical physics, weather forecasting, climate research, molecular modeling (computing the structures and properties of chemical compounds, biological macromolecules, polymers, and crystals), physical simulations (such as simulation of airplanes in wind tunnels, simulation of the detonation of nuclear weapons, and research into nuclear fusion), cryptanalysis, and many others. Some supercomputers have also been designed for very specific functions like cracking codes and playing chess; ***Deep Blue*** is a famous chess-playing supercomputer. Major universities, military agencies and scientific research laboratories depend on and make use of supercomputers very heavily.

**Hardware and Software Design**

Supercomputers using custom CPUs traditionally gained their speed over conventional computers through the use of innovative designs that allow them to perform many tasks in parallel, as well as complex detail engineering. They tend to be specialized for certain types of computation, usually numerical calculations, and perform poorly at more general computing tasks. Their memory hierarchy is very carefully designed to ensure the processor is kept fed with data and instructions at all times - in fact, much of the performance difference between slower computers and supercomputers is due to the memory hierarchy. Their I/O systems tend to be designed to support high bandwidth, with latency less of an issue, because supercomputers are not used for transaction processing.

Supercomputer designs devote great effort to eliminating software serialization, and using hardware to address the remaining bottlenecks.

**Supercomputer challenges**

* A supercomputer generates large amounts of heat and therefore must be cooled with complex cooling systems to ensure that no part of the computer fails. Many of these cooling systems take advantage of liquid gases, which can get extremely cold.
* Another issue is the speed at which information can be transferred or written to a storage device, as the speed of data transfer will limit the supercomputer's performance. Information cannot move faster than the speed of light between two parts of a supercomputer.
* Supercomputers consume and produce massive amounts of data in a very short period of time. Much work on external storage bandwidth is needed to ensure that this information can be transferred quickly and stored/retrieved correctly.

**Operating Systems and Programming**

Most supercomputers run on a **Linux** or **Unix** operating system, as these operating systems are extremely flexible, stable, and efficient. Supercomputers typically have multiple processors and a variety of other technological tricks to ensure that they run smoothly.

Until the early-to-mid-1980s, supercomputers usually sacrificed instruction set compatibility and code portability for performance (processing and memory access speed).For the most part, supercomputers had vastly different operating systems. The Cray-1 alone had at least six different proprietary OSs largely unknown to the general computing community. Similarly different and incompatible vectorizing and parallelizing compilers for Fortran existed.

In the future, the highest performance systems are likely to use a variant of Linux but with incompatible system-unique features (especially for the highest-end systems at secure facilities).

The base language of supercomputer code is generally **Fortran** or **C**, using special libraries to share data between nodes. Software tools for distributed processing include standard APIs and open source-based software solutions which facilitate the creation of a supercomputer from a collection of ordinary workstations or servers.

**Processing Speeds**

Supercomputer computational power is rated in **FLOPS** (Floating Point Operations Per Second). The first commercially available supercomputers reached speeds of 10 to 100 million FLOPS. The next generation of supercomputers is predicted to break the petaflop level. This would represent computing power more than 1,000 times faster than a teraflop machine. A relatively old supercomputer such as the Cray C90 (built in the mid to late 1990s) has a processing speed of only 8 gigaflops. It can solve a problem, which takes a personal computer a few hours, in .002 seconds! From this, we can understand the vast development happening in the processing speed of a supercomputer.

The site [www.top500.org](http://www.top500.org/) is dedicated to providing information about the current 500 sites with the fastest supercomputers. Both the list and the content at this site is updated regularly, providing those interested with a wealth of information about the developments in supercomputing technology.

**Supercomputer Architecture**

Supercomputer design varies from model to model. Generally, there are vector computers and parallel computers. Vector computers use a very fast data “pipeline” to move data from components and memory in the computer to a central processor. Parallel computers use multiple processors, each with their own memory banks, to 'split up' data intensive tasks.

A vector computer solves a series of problems one by one in a consecutive order whereas a parallel computer solves all the problems parallely as it is equipped with multiple processors. Hence, the parallel computer would be able to solve the problems much quicker than a vector computer.

Other major differences between vector and parallel processors include how data is handled and how each machine allocates memory. A vector machine is usually a single super-fast processor with all the computer's memory allocated to its operation. A parallel machine has multiple processors, each with its own memory.

Vector machines are easier to program, while parallel machines, with data from multiple processors, could have trouble with communication of data between them.

Recently, parallel vector computers have been developed to take advantage of both designs.

**Manufacturers of Supercomputers**

There are many manufacturers of good supercomputers and Cray is one among them. Cray provides an informative Web site viz.,[www.cray.com](http://www.cray.com/) with product descriptions, photos, company information, and an index of current developments.

IBM produces supercomputers with most cutting-edge technology. For information about IBM supercomputers visit [www.ibm.com](http://www.ibm.com/). Their *"Blue Gene"* supercomputer, is expected to run 15 times faster at 200 teraflops than their current supercomputers. IBM's *"Blue Sky"* which is called a self-aware supercomputer will be used to work on colossal computing problems such as weather prediction. Additionally, this supercomputer can self-repair, requiring no human intervention.

Intel has developed a line of supercomputers known as Intel TFLOPS. Supercomputers that use thousands of Pentium Pro processors in a parallel configuration to meet the supercomputing demands of their customers. To know more about Intel supercomputers, visit Intel's website[www.intel.com](http://www.intel.com/).

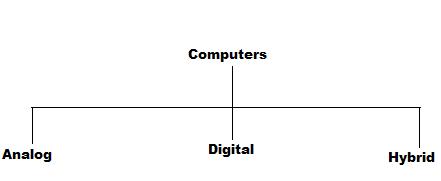
**TYPES OF COMPUTERS**

Computers can be classified based on their principles of operation or on their configuration. By configuration, we mean the size, speed of doing computation and storage capacity of a computer.

**Types of Computers based on Principles of Operation**

There are three different types of computers according to the principles of operation. Those three types of computers are

* **Analog Computers**
* **Digital Computers**
* **Hybrid Computers**



**Analog Computers**

Analog Computer is a computing device that works on continuous range of values. The results given by the analog computers will only be approximate since they deal with quantities that vary continuously. It generally deals with physical variables such as voltage, pressure, temperature, speed, etc.

**Digital Computers**

On the other hand a digital computer operates on digital data such as numbers. It uses binary number system in which there are only two digits 0 and 1. Each one is called a bit.

The digital computer is designed using digital circuits in which there are two levels for an input or output signal. These two levels are known as logic 0 and logic 1. Digital Computers can give more accurate and faster results.

Digital computer is well suited for solving complex problems in engineering and technology. Hence digital computers have an increasing use in the field of design, research and data processing.

Based on the purpose, Digital computers can be further classified as,

* **General Purpose Computers**
* **Special Purpose Computers**

Special purpose computer is one that is built for a specific application. General purpose computers are used for any type of applications. They can store different programs and do the jobs as per the instructions specified on those programs. Most of the computers that we see today, are general purpose computers.

**Hybrid Computers**

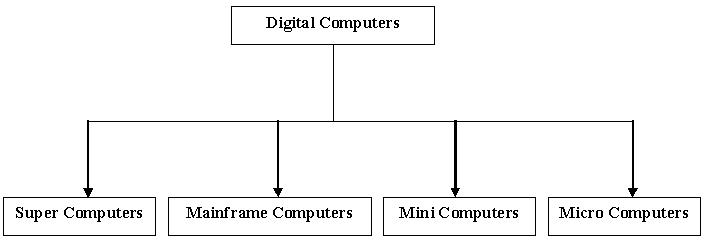
A hybrid computer combines the desirable features of analog and digital computers. It is mostly used for automatic operations of complicated physical processes and machines. Now-a-days analog-to-digital and digital-to-analog converters are used for transforming the data into suitable form for either type of computation.

For example, in hospital’s ICU, analog devices might measure the patients temperature, blood pressure and other vital signs. These measurements which are in analog might then be converted into numbers and supplied to digital components in the system. These components are used to monitor the patient’s vital sign and send signals if any abnormal readings are detected. Hybrid computers are mainly used for specialized tasks.

**Types of Computers based on Configuration**

There are four different types of computers when we classify them based on their performance and capacity. The four types are

* [**Super Computers**](http://www.computerbasicsguide.com/basics/supercomputers.html)
* **Mainframe Computers**
* **Mini Computers**
* **Micro Computers**



**Super Computers**

When we talk about types of computers, the first type that comes to our mind would be Super computers. They are the ***best*** in terms of processing capacity and also the ***most expensive*** ones. These computers can process billions of instructions per second. Normally, they will be used for applications which require intensive numerical computations such as stock analysis, weather forecasting etc. Other uses of supercomputers are scientific simulations, (animated) graphics, fluid dynamic calculations, nuclear energy research, electronic design, and analysis of geological data (e.g. in petrochemical prospecting). Perhaps the best known super computer manufacturer is Cray Research. Some of the *"traditional"* companies which produce super computers are **Cray**, **IBM** and **Hewlett-Packard**.

As of July 2009, the IBM Roadrunner, located at Los Alamos National Laboratory, is the fastest super computer in the world.

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**Mainframe Computers**

Mainframe computers can also process data at very high speeds vi.e., hundreds of million instructions per second and they are also quite expensive. Normally, they are used in banking, airlines and railways etc for their applications.

**Mini Computers**

Mini computers are lower to mainframe computers in terms of speed and storage capacity. They are also less expensive than mainframe computers. Some of the features of mainframes will not be available in mini computers. Hence, their performance also will be less than that of mainframes.

**Micro Computers**

The invention of microprocessor (single chip CPU) gave birth to the much cheaper micro computers. They are further classified into

* **Desktop Computers**
* **Laptop Computers**
* **Handheld Computers(PDAs)**

**Desktop Computers**

  
Today the Desktop computers are the most popular computer systems.These desktop computers are also known as personal computers or simply PCs. They are usually easier to use and more affordable. They are normally intended for individual users for their word processing and other small application requirements.

**Laptop Computers**

  
Laptop computers are portable computers. They are lightweight computers with a thin screen. They are also called as notebook computers because of their small size. They can operate on batteries and hence are very popular with travellers. The screen folds down onto the keyboard when not in use.

**Handheld Computers**

  
Handheld computers or Personal Digital Assistants (PDAs) are pen-based and also battery-powered. They are small and can be carried anywhere. They use a pen like stylus and accept handwritten input directly on the screen. They are not as powerful as desktops or laptops but they are used for scheduling appointments,storing addresses and playing games. They have touch screens which we use with a finger or a stylus.

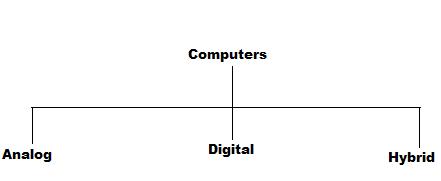
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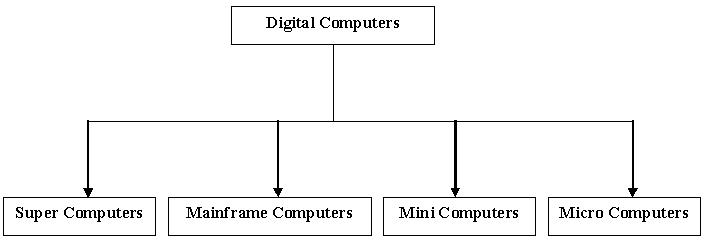
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**Types of RAM**

The following are some common types of RAM:

* **SRAM**: Static random access memory uses multiple transistors, typically four to six, for each memory cell but doesn't have a capacitor in each cell. It is used primarily for [cache](http://computer.howstuffworks.com/cache.htm).
* **DRAM**: **Dynamic random access memory** has memory cells with a paired transistor and [capacitor](http://electronics.howstuffworks.com/capacitor.htm)requiring constant refreshing.
* **FPM DRAM**: **Fast page mode dynamic random access memory** was the original form of DRAM. It waits through the entire process of locating a bit of data by column and row and then reading the bit before it starts on the next bit. Maximum transfer rate to L2 cache is approximately 176 MBps.
* **EDO DRAM**: **Extended data-out dynamic random access memory** does not wait for all of the processing of the first bit before continuing to the next one. As soon as the address of the first bit is located, EDO DRAM begins looking for the next bit. It is about five percent faster than FPM. Maximum transfer rate to L2 cache is approximately 264 MBps.
* **SDRAM**: **Synchronous dynamic random access memory** takes advantage of the burst mode concept to greatly improve performance. It does this by staying on the row containing the requested bit and moving rapidly through the columns, reading each bit as it goes. The idea is that most of the time the data needed by the CPU will be in sequence. SDRAM is about five percent faster than EDO RAM and is the most common form in desktops today. Maximum transfer rate to L2 cache is approximately 528 MBps.
* **DDR SDRAM**: **Double data rate synchronous dynamic RAM** is just like SDRAM except that is has higher bandwidth, meaning greater speed. Maximum transfer rate to L2 cache is approximately 1,064 MBps (for DDR SDRAM 133 MHZ).
* **RDRAM**: **Rambus dynamic random access memory** is a radical departure from the previous DRAM architecture. Designed by [Rambus](http://www.rambus.com/), RDRAM uses a **Rambus in-line memory module (RIMM)**, which is similar in size and pin configuration to a standard DIMM. What makes RDRAM so different is its use of a special high-speed data bus called the Rambus channel. RDRAM memory chips work in parallel to achieve a data rate of 800 MHz, or 1,600 MBps. Since they operate at such high speeds, they generate much more heat than other types of chips. To help dissipate the excess heat Rambus chips are fitted with a heat spreader, which looks like a long thin wafer. Just like there are smaller versions of DIMMs, there are also SO-RIMMs, designed for notebook computers.
* **Credit Card Memory**: Credit card memory is a proprietary self-contained DRAM memory module that plugs into a special slot for use in [notebook computers](http://computer.howstuffworks.com/laptop.htm).
* **PCMCIA Memory Card**: Another self-contained DRAM module for notebooks, cards of this type are not proprietary and should work with any notebook computer whose system bus matches the memory card's configuration.
* **CMOS RAM**: CMOS RAM is a term for the small amount of memory used by your computer and some other devices to remember things like [hard disk](http://computer.howstuffworks.com/hard-disk.htm) settings -- see [Why does my computer need a battery?](http://computer.howstuffworks.com/question319.htm) for details. This memory uses a small battery to provide it with the power it needs to maintain the memory contents.
* **VRAM**: **VideoRAM**, also known as **multiport dynamic random access memory** (MPDRAM), is a type of RAM used specifically for [video adapters](http://computer.howstuffworks.com/graphics-card1.htm) or 3-D accelerators. The "multiport" part comes from the fact that VRAM normally has two independent access ports instead of one, allowing the CPU and graphics processor to access the RAM simultaneously. VRAM is located on the graphics card and comes in a variety of formats, many of which are proprietary. The amount of VRAM is a determining factor in the[resolution](http://computer.howstuffworks.com/monitor4.htm) and [color depth](http://computer.howstuffworks.com/monitor7.htm) of the display. VRAM is also used to hold graphics-specific information such as[3-D geometry data](http://computer.howstuffworks.com/3dgraphics.htm) and texture maps. True multiport VRAM tends to be expensive, so today, many graphics cards use **SGRAM** (synchronous graphics RAM) instead. Performance is nearly the same, but SGRAM is cheaper.

|  |  |
| --- | --- |
|  |  |
| [ADC](http://www.techterms.com/definition/adc) | Analog-to-Digital Converter |
|  |  |
| [ALU](http://www.techterms.com/definition/alu) | Arithmetic Logic Unit |
| [ANSI](http://www.techterms.com/definition/ansi) | American National Standards Institute |
| [ASCII](http://www.techterms.com/definition/ascii) | American Standard Code for Information Interchange |
|  |  |
| [BASIC](http://www.techterms.com/definition/basic) | Beginner's All-purpose Symbolic Instruction Code |
| [BIOS](http://www.techterms.com/definition/bios) | Basic Input/Output System |
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| [BMP](http://www.techterms.com/definition/bmp) | Bitmap |
| [BSOD](http://www.techterms.com/definition/bsod) | Blue Screen of Death |
| [CAD](http://www.techterms.com/definition/cad) | Computer-Aided Design |
| [Cc](http://www.techterms.com/definition/cc) | Carbon Copy |
|  |  |
| [CD](http://www.techterms.com/definition/cd) | Compact Disc |
| [CD-R](http://www.techterms.com/definition/cdr) | Compact Disc Recordable |
| [CD-ROM](http://www.techterms.com/definition/cdrom) | Compact Disc Read-Only Memory |
| [CD-RW](http://www.techterms.com/definition/cdrw) | Compact Disc Re-Writable |
| [CPU](http://www.techterms.com/definition/cpu) | Central Processing Unit |
| [DBMS](http://www.techterms.com/definition/dbms) | Database Management System |
| [DDR](http://www.techterms.com/definition/ddr) | Double Data Rate |
| [DDR2](http://www.techterms.com/definition/ddr2) | Double Data Rate 2 |
| [DDR3](http://www.techterms.com/definition/ddr3) | Double Data Rate Type 3 |
| [DOS](http://www.techterms.com/definition/dos) | Disk Operating System |
| [DPI](http://www.techterms.com/definition/dpi) | Dots Per Inch |
| [DRAM](http://www.techterms.com/definition/dram) | Dynamic Random Access Memory |
| [DVD](http://www.techterms.com/definition/dvd) | Digital Versatile Disc |
| [DVD+R](http://www.techterms.com/definition/dvdr) | Digital Versatile Disc Recordable |
| [DVD+RW](http://www.techterms.com/definition/dvdrw) | Digital Versatile Disk Rewritable |
| [DVD-R](http://www.techterms.com/definition/dvd-r) | Digital Versatile Disc Recordable |
| [DVD-RAM](http://www.techterms.com/definition/dvdram) | Digital Versatile Disc Random Access Memory |
| [DVD-RW](http://www.techterms.com/definition/dvd-rw) | Digital Versatile Disk Rewritable  ENIAC  Electronic Numerical Integrator And Computer |

Extended Binary Coded Decimal Interchange Code (EBCDIC)

OCR Optical character recognition

# MICR Magnetic ink character recognition

USB Universal Serial Bus

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| [HTTP](http://www.techterms.com/definition/http) | HyperText Transfer Protocol |
| [HTTPS](http://www.techterms.com/definition/https) | HyperText Transport Protocol Secure |
| [VPN](http://www.techterms.com/definition/vpn) | Virtual Private Network |