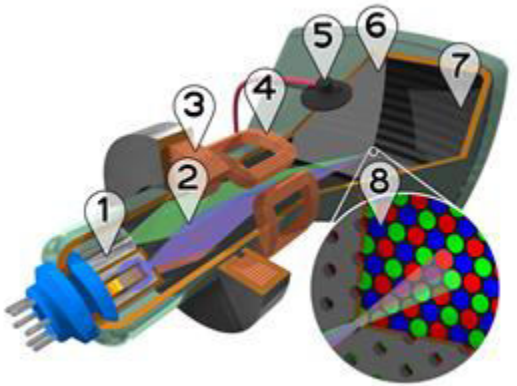
CRT : Chatode Ray Tube

Cutaway rendering of a color CRT:



1. Three Electron guns (for red, green, and blue phosphor dots)
2. Elektron beams
3. Focusing coils
4. Deflection coils
5. Anode connection
6. Mask for separating beams for red, green, and blue part of displayed image
7. Phosphor layer with red, green, and blue zones
8. Close-up of the phosphor-coated inner side of the screen

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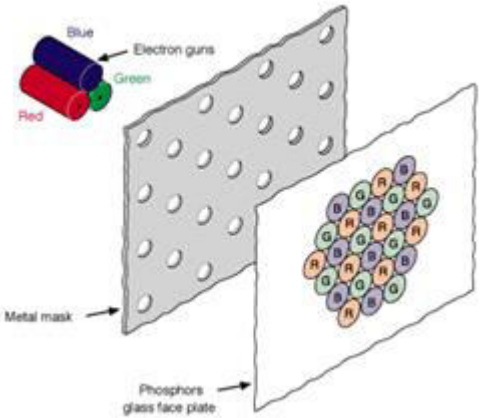
- A cathode ray tube (CRT) is a specialized vacuum tube in which images are produced when an electron beam strikes a phosphorescent surface. Most desktop computer displays make use of CRTs. The CRT in a computer display is similar to the "picture tube" in a television receiver.
- A cathode ray tube consists of several basic components. The electron gun generates a narrow beam of electrons. The anodes accelerate the electrons. Deflecting coils produce an extremely frequency electromagnetic field that allows for constant adjustment of the direction of the electron beam. There are two sets of deflecting coils: horizontal and vertical. The intensity of the beam can be varied. The electron beam produces a tiny, bright visible spot when it strikes the phosphor-coated screen.

In computer systems, there are several display modes, or sets of specifications according to which the CRT operates. The most common specification for CRT displays is known as SVGA (Super Video Graphics Array). Notebook computers typically use liquid crystal display. The technology for these displays is much different than that for CRTs. Every pixel on a display is composed of 3 color phosphor droplets. The distance of nearest pixels is called “dot pitch”. Today CRT monitors have dot pitch values between 0.24 mm and 0.28 mm. When this value is smaller display quality is better.



Vector Display

- A **vector monitor** or **vector display** is a display device used for early computers. It is a type of CRT, similar to the oscilloscope, but typically uses magnetic, rather than electrostatic, deflection. Here, the beam traces straight lines between arbitrary points, repeatedly refreshing the display as quickly as possible.
- Vector displays for computers did not noticeably suffer from the display artifacts of Aliasing and pixelation,but were limited in that they could display only a shape's outline (advanced vector systems could provide a limited amount of shading), and only a limited amount of crudely-drawn text (the number of shapes and/or textual characters drawn was severely limited, because the speed of refresh was roughly inversely proportional to how many vectors needed to be drawn).

Lecture No 10 Topic: Storage Tube

- Mostly obsolete, a **storage tube** is a special monochromatic CRT whose screen has a kind of 'memory'. When a portion of the screen is illuminated by the CRT's electron gun,it stays lit until a screen erase command is given. Thus, screen update commands need only be sent once and this allows the use of a slower data connection, The two main advantages were:
- Very low bandwidth needs compared to vector graphics displays, thus allowing much longer cable distances between computer and terminal
- No need for display-local RAM (as in modern terminals), which was prohibitively expensive at the time.