

Multimedia



CompuTech

Multimedia

How a CD-Writeable works:

A CD-Writeable is a CD-Rom that you can write to one time. CD-Writeables are made up of several layers, and the CD Burner contains two lasers, a write head laser and a read head laser.



CompTech

Multimedia

How a CD-Writeable works:

The first layer is a thick layer of polycarbonate plastic, then a layer of dyed material, then a reflective metallic material (gold) layer, then a protective layer of lacquer and then a layer of scratch-resistant polymer material.



CompuTech

Multimedia

How a CD-Writeable works:

As the laser is sent through the layer of polycarbonate plastic, it follows a tight spiral groove. The groove has a continuous wave pattern that helps the write head know it's position in relation to the surface.



CompTech

Multimedia

How a CD-Writeable works:

The groove is called ATIP, absolute timing in pregroove, and the wave have a set frequency that tells the write head if it is near the outside or the inside of the CD-Writeable.



CompuTech

Multimedia

How a CD-Writeable works:

The dye layer is designed to absorb light at a specific frequency. When this layer absorbs the energy it creates pits. The pits are either created by distorting the surface, creating a bubble on the surface or bleaching the surface.



CompuTech

Multimedia

How a CD-Writeable works:

So when the write head's laser is on, it creates a pit, when it is off, it leaves the surface reflective.



Multimedia

How a CD-Writeable works:

When a CD is burned, a table of contents is also burned. This is similar to the FAT, to keep track of where the files are located.



Multimedia

How a CD-Writeable works:

The write laser beam is high-powered, around 780 nanometers.



Multimedia

How a CD-Writeable works:

The read head is the same as the detector in a CD-Rom. This laser beam is at a much lower frequency.



Multimedia

How a CD-Writeable works:

The read head simply detects the lands and pits made by the write head laser, and converts it to 1's and 0's



References

How Computer Work: Millenium Edition

by: Ron White, 1999 QUE

