

The History Of Compact Disc Media

A typical compact disc will have a diameter of just 12 cm and about 80 minutes audio data can be stored on it. Smaller CDs are also manufactured for storing single songs (called singles). They are 8 cm in diameter and can store 24 minutes of audio data. The major research and development work was done by Phillips and Sony. One of the first compact discs came in market way back in the year 1982 and till date, remains one of the most popular mediums of audio recordings. In 1979, Phillips and Sony started off a joint working group in order to design a successful digital audio disc. After a year's work and lot of experiments and discussions, the compact disc was invented. No single person can be said to have invented it, a large group collectively invented the compact disc. In August, 1982, the first CD for commercial purposes was manufactured in a Phillips factory in Germany. The first music title that was released on a CD was `The Visitors (1981) by ABBA`. Soon after, in October of the same year, the CD players from Sony also reached the markets. The event is often called as `the Big Bang` in the field of digital audio. The new concept was an immediate hit in the market. Consumers were enthusiastic about the quality of the audio. The price of compact disc players sank really fast, as a result of which, the popularity increased even more. A compact disc is a 1.2 mm thick polycarbonate plastic disc weighing around 16 grams. To make the surface reflective, a very thin layer of aluminum is applied on one side of the disc. A film of lacquer is also applied to act as a protective shield. The label is printed on the other side using normal printing methods like offset or screen printing. The data is stored on the media in form of an array of tiny indentation called pits that are encoded in a spiral track. A pit is just 500 nm wide and 100 nm deep and the length varies from 850 to 3500 nm. The areas between two pits are called lands. The compact discs are much more durable than the precious formats of audio storage. However, they can be damaged a little from the environment factors and daily usage. The data is a lot closer to the label side, so more damage occurs if scratches are made of the label. The logical format to store audio data is a 2-channel 16-bit PCM encoded data at a sampling rate frequency of 44.1 KHz. The sampling rate was chosen directly as a result of the sampling rate theorem of double frequency needed in recordings. With some more calculations, the exact sampling rate of 44.1 KHz was decided. The compact discs are available in a number of different variations. Some of them are: Text - Compact disc that allows for the storage of information like song name, artist, album name as text along with the standard audio data. Graphics - These contain additional graphics data. They run normally on a normal CD player, but can output graphics data when played on a CD+G player. CD ROM - ROMs or Read Only Memory, as the name suggests are for the compact discs from which data can only be read. Video - Video CDs or VCDs are compact discs with video data. Photo - it was designed by Kodak for storing photos digitally in a compact disc. They were able to store more than 100 images when first launched. CD + RW - these are media on which data can be written, erased and re-written more than once.

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