
Digital Recording Formats

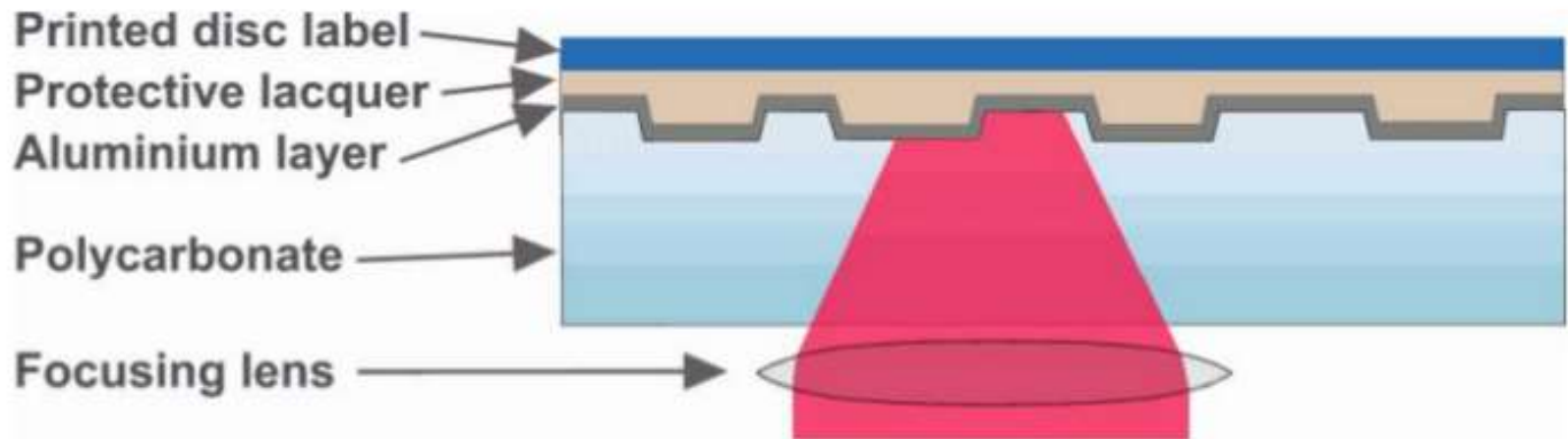
Prepared by
Arun Rama Varma

CD – Compact Disc

- First launched (in Japan) in October 1982.
- Originally designed to hold over an hour of high quality stereo audio but current CDs can store up to 80 minutes.
- The audio is stored in a digital format so that noise, which is often associated with vinyl and cassettes, is virtually non-existent.

COMPACT DISC & PLAYER

- Developed by Philips and Sony and introduced into the market in 1982.
- Superior sound quality without clicks, hiss or other defects
- Fast random access to any track
- Long-life; compact discs do not wear out
- Compact size: only 12cm in diameter so they take up little storage space



- The CDP's laser beam is guided across the disc from the inside to the outside, starting from at the lead-in area moving, outward through the programme area and ending at the outer edge with the lead-out area.

- The CD spins at a fixed Constant Linear Velocity (CLV) of 1.2 m/s for CD with programme exceeding 60 minutes.
- A CD programme under 60 minutes has a CLV of 1.4 m/s. The angular velocity (rpm) decreases
- At linear velocity of 1.2 m/s the angular velocity varies between 486-196 rpm.
- Data is stored in pit formation.
- The total number of spiral revolutions on a CD is 20,625.

CD Specification Books

- Red Book – Audio CD
- Blue Book – Enhanced CD
- Orange Book – CD-ROM
- White Book – Video CD

DAT – Digital Audio Tape

- DAT was developed by Sony in the early 1980's as new consumer format to replace the analogue Compact Cassette.
- High Fidelity Recording
- There is no signal degradation during playback or recording because the audio signal is recorded digitally on a DAT.
- There is no tape hiss, noise, distortion and wow and flutter which are inherent limitations found in cassette tape.

DAT Mechanism

- Extremely large amount of digital audio data involved
- For this reason a DAT employs rotation heads like those of a VTR.
- The tape wraps around only 90° of a 30mm drum's circumference.
- The drum of the DAT rotates at 2000 rpm (1800 rpm for VTR), for a relative tape speed of 3.13 meter per sec or 66 times that of an analogue cassette at 4.76 cm/s.

