

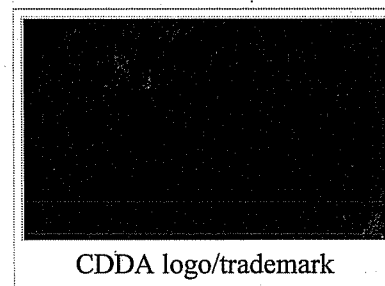
CDs 18

Red Book (audio CD standard)

From Wikipedia, the free encyclopedia

Red Book is the standard for audio CDs (**Compact Disc Digital Audio** system, or **CDDA**). It is named after one of a set of color-bound books that contain the technical specifications for all CD and CD-ROM formats.

The first edition of the Red Book was released in June 1980 by Philips and Sony; it was adopted by the Digital Audio Disc Committee and ratified as IEC 908. The standard is not freely available and must be licensed from Philips. At the time of writing, the cost per the relevant Philips order form (document no. 28/10/04-3122 783 0027 2) is US\$5,000. As of 2006, the IEC 908 document is now known as IEC 60908 and is also available as a PDF download for \$210 [1] (<http://webstore.ansi.org/ansidocstore/product.asp?sku=IEC+60908+Ed.+2.0+b%3A1999>).



Contents

- 1 Technical details
- 2 Copy protection
- 3 See also
- 4 External links

- ① ipod fix (hard drive / flash)
- ② CD audio
- ③ MP3

Technical details

The Red Book specifies the physical parameters and properties of the CD, the optical "stylus" parameters, deviations and error rate, modulation system and error correction, and subcode channels and graphics.

It also specifies the form of digital audio encoding (2-channel signed 16-bit PCM sampled at 44100 Hz).

The frequency response of audio CD, from 20 Hz to 20 kHz

Bit rate = 44100 samples/s × 16 bit/sample × 2 channels = 1411.2 kbit/s (more than 10 MB per minute)

Sample values range from -32768 to +32767.

On the disc, the data are stored in sectors of 2352 bytes each, read at 75 sectors/s. Onto this is added the overhead of EFM, CIRC, L2 ECC, and so on, but these are not typically exposed to the application reading the disc.

By comparison, the bit rate of a "1x" data CD is defined as 2048 bytes/sector × 75 sectors/s = exactly 150 KiB/s = about 8.8 MiB per minute.

Beethoven's Ninth
× 45 MIN = 750 MB

MP3 ~ 1 MB

Copy protection

Recently, some major recording publishers have begun to sell CDs that violate the Red Book standard for the purposes of copy prevention, using systems like Copy Control, or extra features such as DualDisc, which features a CD-layer and a DVD-layer. The CD-layer is much thinner, 0.9 mm, than required by the Red Book, which stipulates 1.2 mm. Philips and many other companies have warned them that including the Compact Disc Digital Audio logo on such non-conforming discs may constitute trademark infringement; either in anticipation or in response, the long-familiar logo is no longer to be seen on recent copy-protected CDs, as well as stickers and warnings that the CD is not standard and may not play in all CD players.

See also

- Extended Copy Protection — source of the Sony DRM scandal
- DRM (computing)
- Four-channel compact disc digital audio

External links

- Philips' Audio Standards licensing info (<http://www.ip.philips.com/services/?module=IpsLicenseProgram&command=View&id=15&part=2>)
- IEC 60908 publication info (<http://webstore.iec.ch/webstore/webstore.nsf/artnum/023623>)

Retrieved from

Rainbow Books

- Red Book** (CD Digital Audio)
- Yellow Book (CD-ROM and CD-ROM XA)
- Orange Book (CD standard) (CD-R and CD-RW)
- White Book (Video CD)
- Blue Book (Enhanced CD, CD+G and CD-Plus)
- Beige Book (Photo CD)
- Green Book (CD-i standard) (CD-i)
- Purple Book (DDCD)
- Scarlet Book (Super Audio CD)

"http://en.wikipedia.org/wiki/Red_Book_%28audio_CD_standard%29"

Categories: Accuracy disputes | Rainbow Books | Audio storage | IEC standards | 1980 works

- This page was last modified 18:27, 25 March 2007.
- All text is available under the terms of the GNU Free Documentation License. (See **Copyrights** for details.)

Wikipedia® is a registered trademark of the Wikimedia Foundation, Inc., a US-registered 501(c)(3) tax-deductible nonprofit charity.