

MP3 is the most popular audio format for storing and listening to music. But there are also many other popular audio formats on the Internet, such as WAV, WMA, OGG and so on. Maybe you need to understand the differences between them. Here are the most popular types.

CDA (*.cda)

CDA (CD Audio) format is developed by Philips in the 1970's. It is the most popular audio format used in CDs. CDA choose a sample rate of 44,100 samples per second (44.1 kHz), Each "sample" is a 16-bit number, ranging from -32,768 to 32,767, which means the best audio quality. But, you can not play CDs without CD-ROM or special CD player. So, CD Ripper is needed. CD Ripper can help you to convert CDs to other audio format.

WAV (*.wav)

WAV is the IBM/Microsoft sound format, it is used in Windows and supported on Macs and works in all web browsers. Wave files can have various sample rates, sizes and channels, but they are not compressed and tend to create large files. Approximately 10 MB to store just one minute of CD-quality audio (44100Hz, 16 bits).

Table 1. Sample and Size (per minute):

Sample	8 bits		16bits	
	Mono	Stereo	Mono	Stereo
11.025 Khz	0.66MB	1.32MB	1.32MB	2.65MB
22.050 Khz	1.32MB	2.65MB	2.65MB	5.29MB
44.100 Khz	2.65MB	5.29MB	5.29MB	10.6MB

MP3 (*.mp3 *.m3u)

MP3 (MPEG Audio Layer-3) belongs to MPEG (Movie Picture Expert Group), which developed by Fraunhofer IIS in Germany and University of Erlangen in 1987 (<http://iis.fhg.de>). It is a compressed, lossy, audio format that reduces file size to less than 10% the size of a .WAV file while still maintaining good sound quality.

In 1998 Fraunhofer began asking companies who use MP3 technology to pay license fees and royalties. As a reaction to this, work has started on a royalty-free Ogg Vorbis format.

Table 2. MP3 quality:

(Bitrate) kbps	Quality	Size (per minute)
1411	CD	10.6 MB
192	Excellence	1.44 MB
160	Excellence	1.2 MB
128	Very Good	0.96 MB
112	Good	0.84 MB
96	Good	0.72 MB
64	FM	0.48 MB
32	AM	0.24 MB

WMA (*.wma)

WMA stands for Windows Media Audio 8 encoding, developed by Microsoft.

Microsoft's Windows Media Player 8, which chairman Bill Gates expects to rival MP3 in audio and video quality. Microsoft says the latest version of Windows Media offers near-CD quality audio formatting at 48 kilobits per second. Microsoft also claims to have tripled the audio compression of MP3s, making it possible to store three times as much music on space-challenged hard drives and portable audio devices.

Ogg Vorbis(*.ogg)

"Ogg Vorbis is a fully Open, non-proprietary, patent-and-royalty-free, general-purpose compressed audio format for mid to high quality (8kHz-48.0kHz, 16+ bit, polyphonic) audio and music at fixed and variable bitrates from 16 to 128 kbps/channel. This places Vorbis in the same competitive class as audio representations such as MPEG-4 (AAC), and similar to, but higher performance than MPEG-1/2 audio layer 3, MPEG-4 audio (TwinVQ), WMA and PAC.

Vorbis is the first of a planned family of Ogg multimedia coding formats being developed as part of Xiph.org's Ogg multimedia project." (from <http://www.xiph.org/ogg/vorbis/>)

=The End=

(NOTE:) Allow everyone to reprint this article in any form.However, you must credit TopeeSoft as the author, and you must include a link/reference to this original.

See Also:

http://grahammitchell.net/writings/vorbis_intro.html

<http://164.116.21.67/atech/multimed/mmaudio02.php>

<http://www.sinica.edu.tw/~ez2cclin/acoustic/%AC%DB%C3%F6%AE%E6%A6%A1%A4%B6%B2%D0.html>