

A GUIDE TO MUSIC FILE FORMATS (Gary Hendricks)

Are you confused by the various types of music file formats out there? Most of you would have heard of the popular MP3 format, but are you aware there are other alternative digital music formats like WAV, WMA, RA and MIDI?

Some of these give better sound quality than MP3 (e.g. the WAV format) but also need more disk storage space. Others like WMA give file sizes smaller than the MP3 format and are more suited for portable music players. Let's run through the various file formats now:

The MP3 File Format

MP3 files have the extension ".mp3" and are available for download from many web sites. MP3 (MPEG-1 Audio Layer-3) technology compresses a sound sequence into a very small file (usually one twelfth of the original file size). The designers of MP3 compression algorithm managed to do this by eliminating sounds that the human ear cannot perceive. While MP3 technology is impressive, it has been abused by music pirates. One can very easily create MP3 files from commercial CDs and make them available for download. The RIAA and major music companies have been cracking down on the distribution and sharing of MP3 files in this manner.

The WMA File Format

WMA (Windows Media Audio) is Microsoft's proprietary music file format that it is marketing aggressively. WMA files are smaller in size than MP3 files, but still retain a decent level of sound quality. This format is getting very popular in websites for sampling music and also in portable music players. However, whether WMA will overtake the popularity of MP3 remains to be seen.

The WAV File Format

A wave file is characterized by the file extension ".wav". This music file format provides raw, uncompressed audio data. Originally invented by Microsoft, wave files are still used widely (examples include your start up and shut down sounds in Windows). Audio quality is excellent, but the file size is huge. A full pop song in wave format may take up to 30 MB of disk space or more.

The AIFF File Format

The AIFF (Audio Interchange File Format) is a popular music file formats used in the Apple Macintosh operating system. In a way, they are the Macintosh equivalent of wave files. AIFF files have the file extension ".aif" when accessed via a PC. They contain raw audio data (which result in excellent sound quality) but take up a large amount of disk space.

The MIDI File Format

The MIDI (Musical Instrument Digital Interface) file format was originally created for recording and playing music on digital synthesizers. MIDI files are very small in size. The reason for this is that the MIDI file only contains information on how music is produced (e.g. note-ons and note-offs). The sound card which plays back the MIDI file takes this information and plays back music using an in-built soundcard wavetable.

The RA File Format

RA (RealAudio) files support streaming technology. Created by Progressive Networks, an RA file is highly optimized for live, streaming audio from websites. RA files are best played back on RealAudio players which are freely downloadable from Progressive Networks.

Conclusion

Well, that wraps up our coverage of the most popular music file formats out there. You may be interested to know that there are many software applications which can convert music from one format to another (e.g. MP3 to WAV or WAV to AIFF). Do a search for these applications at www.download.com.

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