www.audiosignal.co.uk

Clipping Simulator

Contents

Clipping Simulator is supplied as a zip file, clippingsimulator.zip. When unzipped it should contain:

ClippingSimulator.exe
CT_Pro.dll

and this information file.

Description

From a user-designated input Wave file, Clipping Simulator generates six output Wave files in which the audio waveform is hard clipped at an amplitude 3, 6, 9, 12, 15 and 18dB respectively below its peak level. In addition, an ASCII text file is generated for each Wave file containing statistical details about the number and duration of the clipping events therein.

System requirements

Clipping Simulator should run on any Windows 32-bit operating system, from Windows 95 onwards. It has been tested on Windows XP Pro.

To run, the software requires that the supplied CT_Pro.dll be installed in the same directory as the executable. This contains the runtime files of Perfect Sync Inc's Console Tools Pro (http://perfectsync.com) which provides enhanced control over the console window's appearance and function.

Wave files for processing must be WAVE_FORMAT (not WAVE_FORMAT_EXTENSIBLE), PCM, 16-bit, stereo and be in 'canonical' format, *ie* with the sample data in Subchunk2. The sampling rate must be 44.1, 88.2 or 176.4kHz.

Operation

Clipping Simulator's operation is largely self-explanatory. The user is asked to specify the input Wave file, for which a full path must be entered, *eg* c:\music\guitar.wav. If the file is found and it meets the criteria listed above, Clipping Simulator immediately processes the file, writing the output files to the same folder with filename modifications that specify the clipping level, *eg* c:\music\guitar 3dB clipping.wav and c:\music\guitar 3dB clipping.txt. 'Job completed' appears in the window when the processing is finished.

Hard clipping of the music waveform generates numerous harmonic distortion products. If these have a frequency exceeding half the sampling rate (*ie* 22.05kHz for 44.1kHz files ripped from CD), they will be folded back into the baseband as aliasing distortion which may make the clipping more audible than it would otherwise be. To minimise this possibility a 44.1kHz Wave file from CD can first be upsampled by a factor of 2 or 4 to 88.2 or 176.4kHz prior to processing. Care should be taken to ensure that the upsampling is performed reliably otherwise this process may introduce distortion itself. If desired, 88.2 or 176.4kHz output files can be burnt to DVD for replay via a DVD-Audio player if you have DVD-A authoring software.

Note that the statistics reported in the accompanying text files will not be exactly the same for upsampled files as for 44.1kHz files.

Licence

This software may be freely distributed on the condition that it is unaltered and distributed in its entirety, including the supplied DLL and this information file. You use Clipping Simulator at your

own risk. No warranty or support for this software is implied or given. Please email any bug reports or suggestions for improvements to freeware@audiosignal.co.uk.

Keith Howard
June 2008