DynamicsAnalysis

Contents

DynamicsAnalysis is supplied as a zip file, dynamicsanalysis.zip. When unzipped it should contain:

> DynamicsAnalysis.exe
> CT_Pro.dll

and this information file.

Description

DynamicsAnalysis analyses the dynamics of a Wave file (mono or stereo with 16-, 24- or 32-bit resolution, integer or 32-bit float) and writes the results as a graph in Windows Enhanced Metafile format. The graph reveals at a glance whether the file has been subject to compression and/or clipping.

System requirements

DynamicsAnalysis should run under any Windows 32-bit operating system, from Windows 95 onwards. It has been tested on Windows XP Pro.
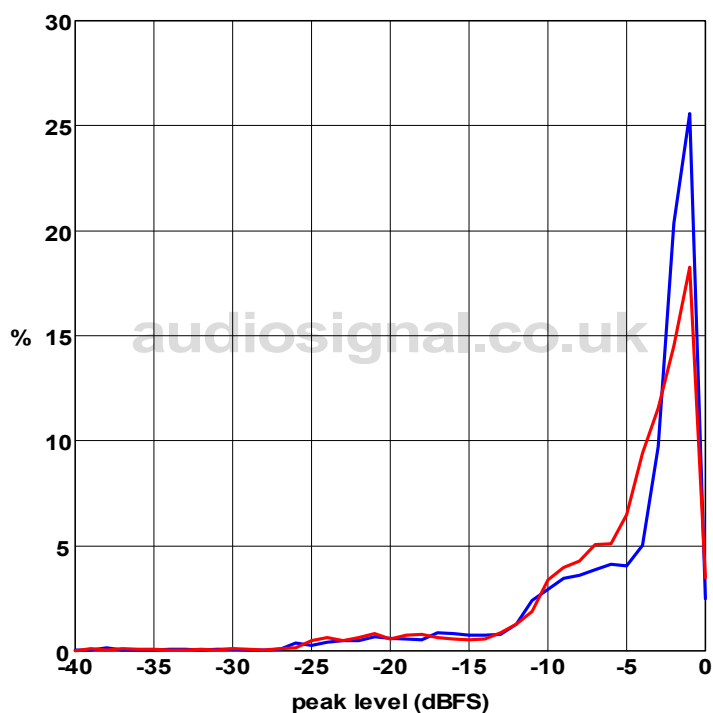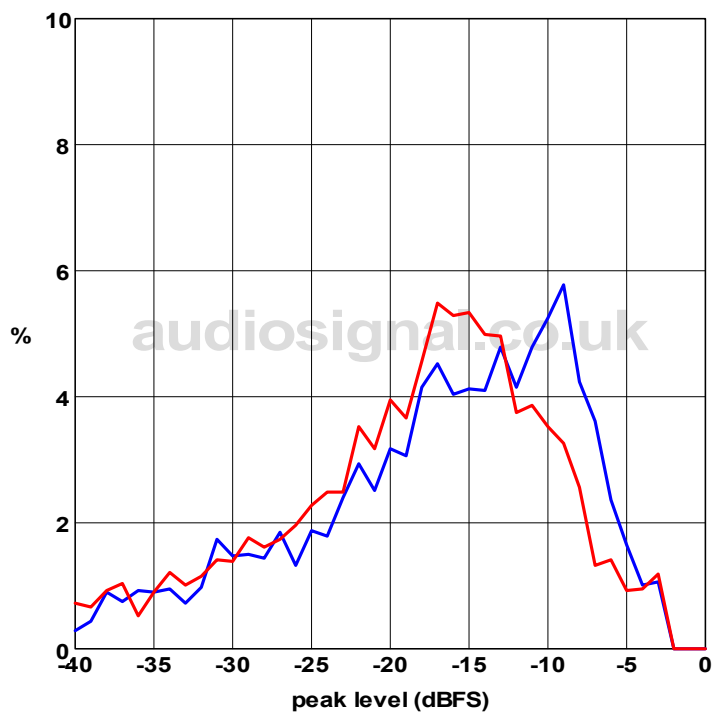
To run, DynamicsAnalysis requires that the supplied CT_Pro.dll be installed in the same directory as the executable. This file contains the runtime files of Perfect Sync Inc's Console Tools Pro (http://perfectsync.com) which provides enhanced control over the console window's appearance and function.

Operation

DynamicsAnalysis begins by asking for the name of the input file, which must be a 16-, 24- or 32-bit PCM or 32-bit float WAVE_FORMAT (not WAVE_FORMAT_EXTENSIBLE) file with the data in Subchunk2. The file name must be a full path including the 'wav' extension, *eg* 'c:\music\ guitar.wav'. If the Wave file header meets the necessary criteria DynamicsAnalysis then reports the file's sampling rate, resolution, length (in samples) and duration (in seconds) before beginning its analysis.

In the analysis process the peak absolute sample value within each 0.1 second slice of the file is recorded and the results graphed as a histogram plotting peak sample value (in dBFS – *ie* decibels reference full-scale) against percentage occurrence. This histogram is saved in Windows Enhanced Metafile format to the same folder as the input Wave file, using the same filename with ' DA.emf' appended. So if the input file is 'c:\music\guitar.wav' the graph will be saved as 'c:\music\guitar DA.emf'. When the analysis is complete and the graph file written, the user is then offered the opportunity to analyse another file. If the response to this is 'N' the application closes.

Two examples of graphs generated by DynamicsAnalysis are shown over the page. In both cases the input files were stereo; results for the left channel are shown in red and for the right channel in blue. In the case of mono files the single plot is blue.

The first graph illustrates a natural, wide dynamic range with a fairly symmetrical plot that shows little evidence of compression and none of clipping. Note how the file never reaches full-scale.

The second graph illustrates a file which has been both compressed and clipped and has a narrow dynamic range. Note how the plot is highly asymmetrical and bunched up towards 0dBFS, with a sudden increase in occurrence at levels just below full-scale.

Licence

This software may be freely distributed provided that it is unaltered and distributed in its entirety, including the supplied DLL and this information file. You use it at your own risk. It is supplied 'as is' with no support or warranty implied or given. Use of this software indicates acceptance of these conditions.

If you encounter any bugs or have suggestions for improvements please let me know via keith@audiosignal.co.uk.

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