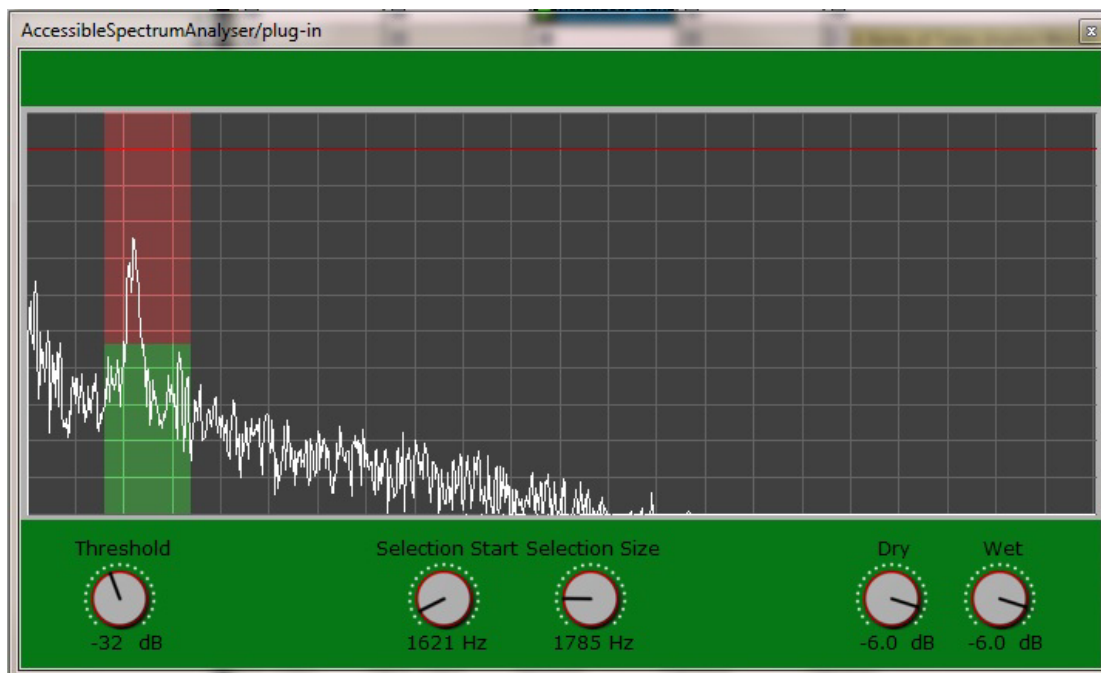


ACCESSIBLE SPECTRUM ANALYSER

Audio Plugin

by Queen Mary University of London

THE ACCESSIBLE SONIFICATION OF THE ACCESSIBLE PEAK METER LANDS ON THE FREQUENCY DOMAIN!



AccessibleSpectrumAnalyser is a real time spectrum analysis plug-in that allows visual impaired users to **inspect spectrograms** using the same sonification as the accessible peak meter. Instead of monitoring the amplitude of the audio signal though, you will be **monitoring the frequency components of the signal** within a customizable selection of frequencies.

The plug-in uses the ["clipping" sonification](#) of the AccessiblePeakMeter. That is, you can set a threshold in dB and, as soon as the energy of any frequency in the selection goes past the threshold, you will hear a short beep. Like in the AccessiblePeakMeter, the beep starts at 440 Hz and it's raised one semitone for each dB of difference between the frequency magnitude and the threshold. In case more than one frequency within the selection is higher than the threshold, then the highest one is taken into account for the sonification purpose.

There is only one single spectrum for both left and right channels: the two channels are mixed together before being analysed. In AccessiblePeakMeter, there is a separate sonification for peaks in the left and the right audio channel. In the AccessibleSpectrumAnalyser instead, one single sonification is **panned from left to right** and the panning represents **the position of the peaking frequency** in the whole spectrum, ranging from 20 Hz on the very left, to 20050 Hz on the very right. For example, if the selected spectrum peaks at 50 Hz then you'll hear the beep towards the left, whereas if the peak is at 20 kHz the beep will occur towards the right.

USAGE

The plug-in comes with five tweak able parameters:

1. **Threshold:** sets the threshold in dB for the clipping sonification. If any frequency within the selection is higher than the threshold, then the plug-in will emit a beep;
2. **Selection Start:** sets the starting point, in Hertz, of the selection. Frequencies within the selection will be monitored for peaks;
3. **Selection Size:** sets the size of the selection, from the starting point. For example, if the selection starts at 1000 Hz and the selection size is 500 hz then all the frequencies between 1000 and 1500 Hz will be monitored for peaks;
4. **Dry:** controls the level of the input audio, namely the audio content you want to analyze;
5. **Wet:** controls the level of the sonification;

The AccessibleSpectrumAnalyser provides access to the parameters by exposing them to inspectors - such as ReaAccess plug-in or the Cakewalk Sonar inspector - in a clear and well formatted way.

The source code of the AccessibleSpectrumAnalyser is available in the [SoundSoftware repository](#). It is released under the [Cokos WDL license](#), which in short means you can alter it and redistribute it freely, even without providing the source code of your derivative work.

Compilation for the plugin formats VST2/VST3/AAX for Win and Mac done by TBProAudio, <https://www.tb-software.com/>