

# Audacity for information professionals

Grainger Engineering Library

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## Terminology (taken from Wikipedia):

Noise floor - The measure of the signal created from the sum of all the noise sources and unwanted signals within a measurement system, where noise is defined as any signal other than the one being monitored.

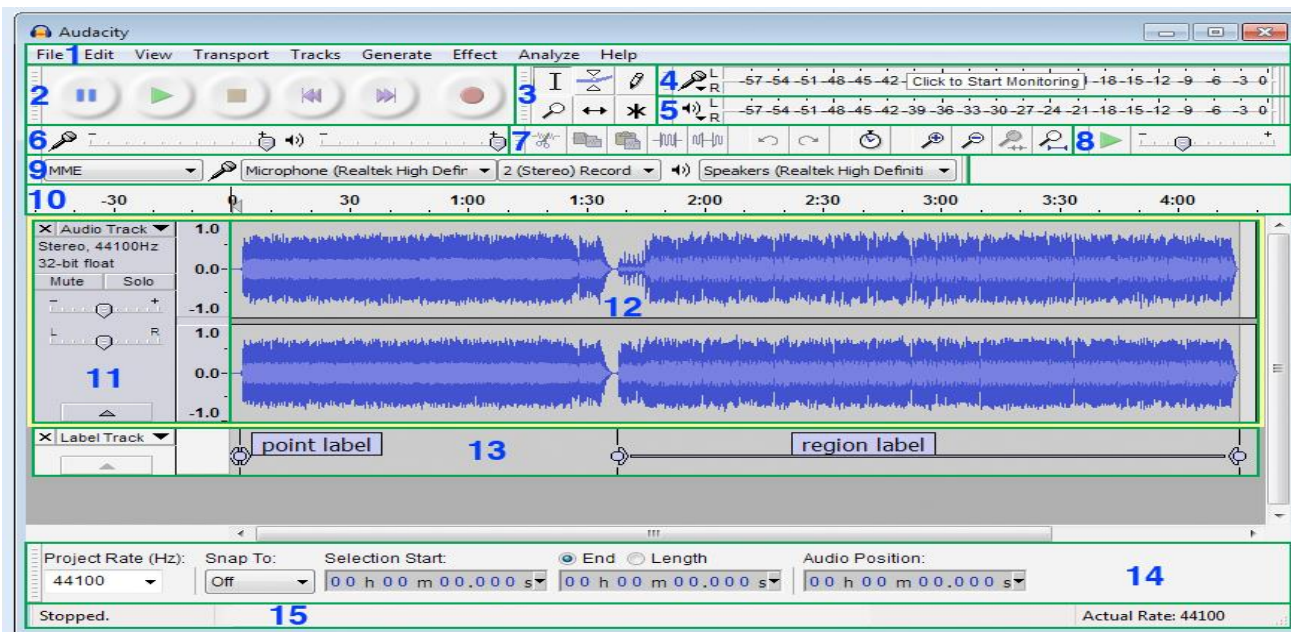
Distortion – The unwanted alteration of the original shape of a waveform.

Sample rate - The number of samples of audio carried per second, measured in Hz or kHz (one kHz being 1 000 Hz).

Clipping - A form of waveform distortion that occurs when an amplifier is overdriven and attempts to deliver an output voltage or current beyond its maximum capability.

## Getting to know Audacity:

Taken from: <http://manual.audacityteam.org/>



1 Menu Bar

2 Transport Toolbar

3 Tools Toolbar

4 Recording Meter Toolbar

5 Playback Meter Toolbar

6 Mixer Toolbar

7 Edit Toolbar

8 Transcription Toolbar

9 Device Toolbar

10 Timeline

11 Track Control Panel

12 Audio Track

13 Label Track

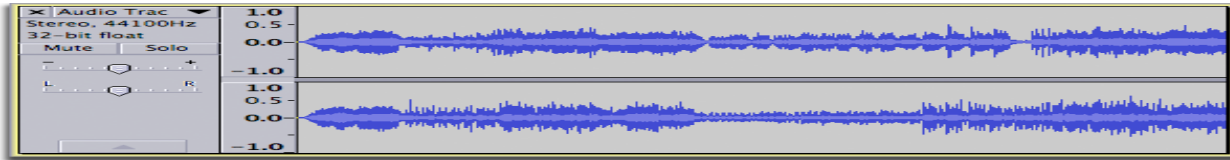
14 Selection Toolbar

15 Status Bar

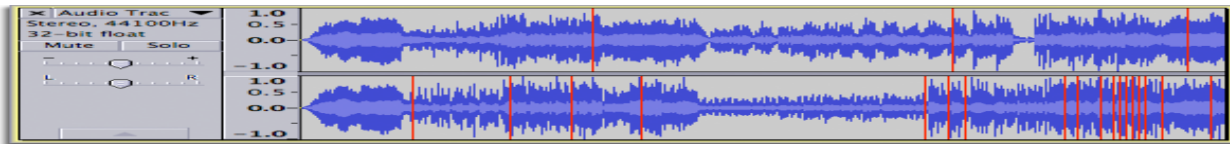
## Recognizing Waveforms:

Taken from: [http://manual.audacityteam.org/man/audacity\\_waveform.html](http://manual.audacityteam.org/man/audacity_waveform.html)

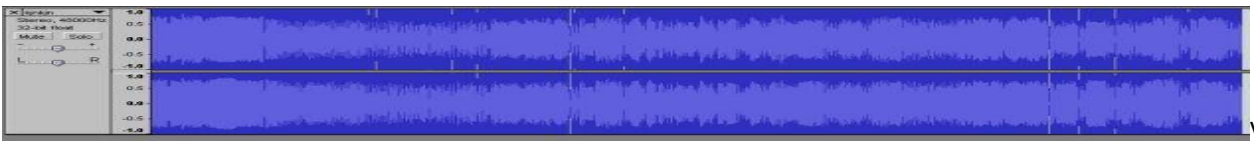
Good/Undistorted waveform



Clipping waveform (the red lines in the track window indicate clipping)



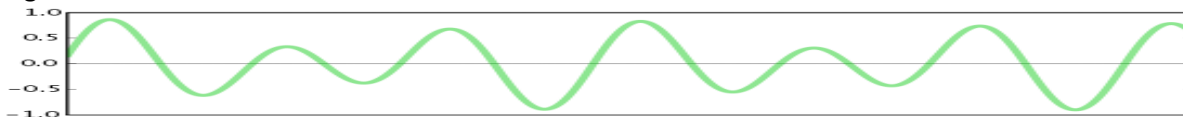
Severely distorted waveform (as demonstrated by the lack of peaks on the top and bottom of the waveform).



## Sample Rate:

Taken from: [http://manual.audacityteam.org/man/digital\\_audio.html](http://manual.audacityteam.org/man/digital_audio.html)

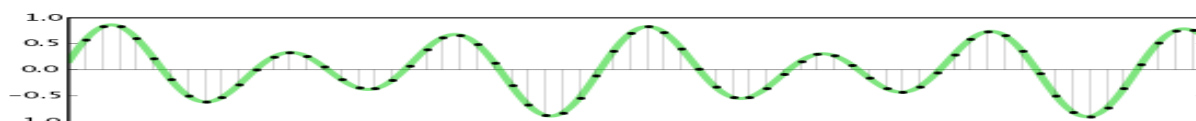
Analog waveform:



Analog recording media such as a phonograph records and cassette tapes represent the shape of the waveform directly, using the depth of the groove for a record or the amount of magnetization for a tape. Analog recording can reproduce an impressive array of sounds, but it also suffers from problems of noise. Notably, each time an analog recording is copied, more noise is introduced, decreasing the fidelity. This noise can be minimized but not completely eliminated.

Digital recording works differently: it samples the waveform at evenly-spaced timepoints, representing each sample as a precise number. Digital recordings, whether stored on a compact disc (CD), digital audio tape (DAT), or on a personal computer, do not degrade over time and can be copied perfectly without introducing any additional noise. The following image illustrates a sampled audio waveform:

Digital sampling:



## Helpful links:

Audacity manual - <http://manual.audacityteam.org/>

List of Audacity tutorials: <http://manual.audacityteam.org/man/tutorials.html>