

Recording sound

Some tips and tricks:

Doing high quality recordings both take time and requires (expensive) equipment, but for many cases fast recording and being able to save snapshots of sound environments are more important than pure audio recordings. Please remember that Panoee works with mp3 files in (mono or) stereo configuration, so there is not really a need for super fancy recording equipment...

This document contains some tips and tricks for doing field sound recordings.

- When recording, be careful when setting the recording volume (the input sound level). If the sound you are recording is too loud, there is a risk that the sound has distortion, which might have ruined the sound.
- Keep in mind that the closer you have the microphone to the sound source, the less interference and room acoustics you record. However, the risk of wind sounds increases if you record voice, and since the microphones you use are directional microphones, the sound volume in the lower frequencies also increases (the proximity effect).
- When recording voice or recording outdoors, the risk of puff sounds is high. This means that some of the voice's sound creates a strong air current that produces a strong noise/sound through the microphone, the same applies when the microphone is blown outdoors. You can then use different types of puff sounds when recording voice, or some form of larger wind protection when recording sounds outdoors.
- Avoid microphonics, i.e. vibrations from muscles or hands when holding the microphone. Try to hold the microphone loosely and relaxed so that the muscles don't tense up too much, or hold the microphone with a pair of soft gloves/mitts that dampen the vibrations.
- Make sure that the environment is as quiet as possible when you record, so that the sound you actually want is not disturbed.
- Avoid recording sounds in hard rooms with a lot of reverberation, such as a stairwell or a church. The reverberation causes poor audibility, and it can be difficult to cut together sounds from different takes.
- Always listen with headphones. Listen to the audio before recording, during recording and after recording. Always make sure the audio sounds good and that all the audio is recorded before you go home.
- Take notes on the order of the recorded material, and which takes were probably the best.

And finally...

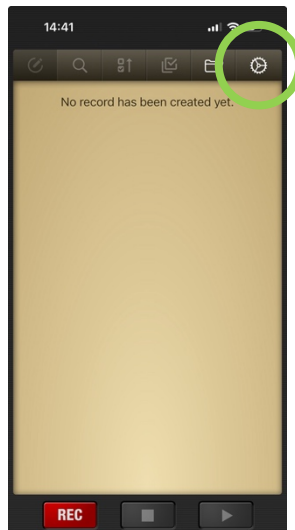
Remember, always listen to the sound; listen before you start the recording, listen while recording, and listen to the recording afterwards. Listen in headphones.

Do not use laptop-speakers or built-in speakers in computer screens, as these tend to sound quite poorly with bad frequency response.

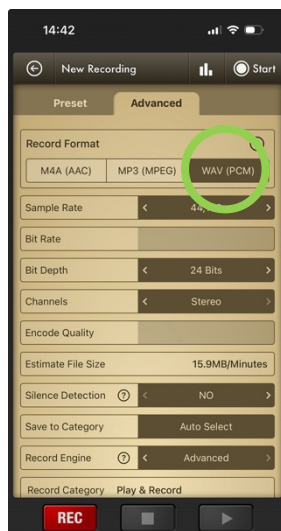
Preferably listen in different types of headphones, and different speakers. If it sounds good in all these listening situations, you have succeeded, the sound is good.

Voice Record for iPhone

Voice Record is a good and useful sound recording app for the iPhone. The app is free, and quite powerful. By clicking on the cogwheel in the upper right corner it is possible to adjust the settings.



In the settings it is recommended to use **WAV (PCM)** as this audio format is uncompressed. This will make sure that the audio quality of the recording is as good as possible. The sample rate can also be adjusted, **44.100Hz** provides sufficient high quality, it samples the sound 44.100 times per second, and can reproduce audio frequencies up to 22.050Hz (and the human auditory system can perceive frequencies up to 20.000Hz). The bit depth sets the precision of the sampled sound value. **16 bits** is sufficient even if 24 bits provides higher quality. Choose to record either in **mono** or **stereo** depending on your sound source, and do not use **silence detection**.



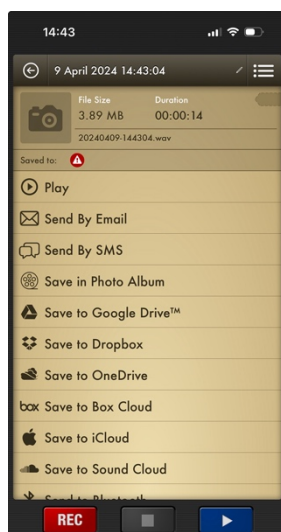
Adjust the **input gain** of the input sound level. Try to record as loud as possible without never reaching the **red** level. If the sound input reaches the red area there is a risk for distortion of the sound and a ruined sound recording.



When the right input gain level is set start the recording by pressing **REC**.



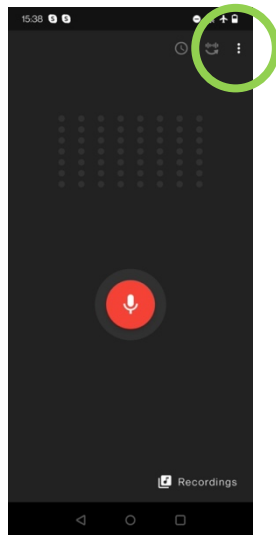
It is also possible to use another microphone than the build in microphone in the mobile device, and adjust the polarity (the directionality) of the microphone.



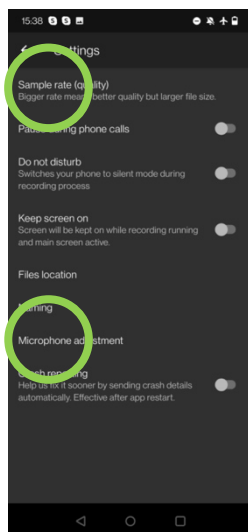
Once the recording is done, press **STOP** (the blue/white square in the middle) to stop the recording. It is then possible to transfer this recording in different ways for editing and post-production.

Smart Voice Recorder for Android

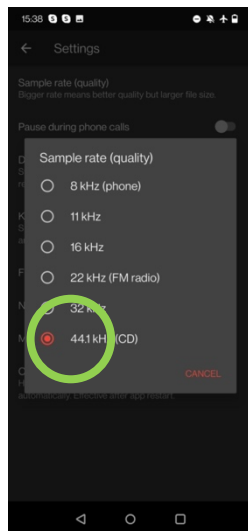
Smart voice recorder is a similar app for Android. It is possible to do recordings in wav audio format, in different sample frequencies. Set the sample frequency to 44.100Hz under settings (the three dots).



And then by clicking on Sample rate (quality):

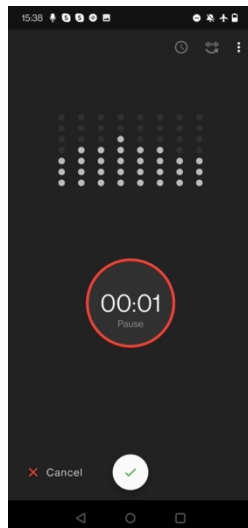


There are several different sample frequencies to choose from, but go for 44.100Hz (i.e. the best quality setting). According to the Nyquist sample theorem, it is possible to record frequencies up to half of the sample frequency. So, by selecting 44.100Hz it is possible to record sounds up to 22.050Hz which is higher than the human ear can hear.



Under Microphone adjustment it is possible to select AGC (Automatic Gain Control) which automatically adjust the recording sound level.

When everything is adjusted start recording by pressing the red microphone symbol.



Once the recording is done it is possible to share it to other devices by clicking share.

