

Noise Gate Exercise

In this exercise you will work with a Noise Gate, learning how to set the plugin parameters so that any background or unwanted noise or sounds (e.g. breaths) are not heard.

In this exercise, there are excerpts of two vocal tracks to gate – examples of two scenarios where a Noise Gate might be necessary:

1. There is noise in the background – maybe an air-conditioner or a fan (noiseGateEx.aif).
2. A recording was made in a “live session” where performers were in the same room and their mics picked up everyone in the room, leading to “bleed-through” (Vocals-Lead-M80Exc.wav). In these cases it’s important to eliminate as much background sound as possible to make it easier to mix the project.

With a Noise Gate, you work with these parameters: **Threshold**: The volume where the gate will open and let sound above the Threshold level pass through; **Attack**: How quickly (or slowly) the gate opens; **Hold**: How long the gate stays open; **Release**: how quickly (or slowly) the gate closes. The Logic Pro Noise Gate includes other parameters you can set. For this exercise we will focus on the above settings.

Instructions

1. Download the NoiseEx040423.zip file from Brightspace and uncompress it into your folder. In the exercise folder you will find two audio files
2. Open Logic
3. Create a New Project and add one audio track to it.
4. Either import the two audio files or drag them into your project.
5. Solo Track 1 or mute Track 2. (The second time, mute Track 1 or solo Track 2).
6. Open the mixer.
7. On the active track, insert a Noise Gate in its Audio Effects slot. The Noise Gate window should open.
8. Find a spot in the active track where you hear only the background noise. Make note of the volume level of the noise on the track meter. Set the Threshold close to that level.
9. Play the track and check if the gate eliminates the noise. Fine-tune the Threshold as needed. With that Threshold setting, can you hear the vocal clearly? Are parts of it missing? Does it sound clipped or choppy?
10. Adjust the Attack, Hold and Release settings.
 - a. Chances are you will want the Attack set low so the gate opens quickly.
 - b. Adjust the Hold time so the gate doesn’t close too quickly, cutting off the ends of words or phrases.
 - c. In most cases you will adjust the Release time so the gate closes when the vocal stops.
 - d. *Note*: If the Threshold is set too low, the noise might still pass through the gate. If it’s too high, some parts of the vocal may not be heard, or it will be choppy or clipped.
11. Adjust the Attack, Release and Hold settings as needed.
 - a. If the Attack is too slow you might not hear the start of a phrase; if the Hold is not set properly the vocal might get clipped as the gate closes too quickly. Much depends on the difference between the volume levels of the noise and the recorded material.
12. Listen closely to the entire active track. Make sure the gate’s settings work for the entire track. Sometimes the settings that work in one section of the track may not be correct for other sections. Sometimes automation may be needed to change the settings where needed.
13. When done with Track 1, go back to step 5 and work on Track 2.
14. When you’ve completed the exercise, save your Logic file as a package, compress it, and upload the zip file to Brightspace.

Note that when the gate is open and you can hear the vocals, you will also hear the noise. You haven’t eliminated it – you have just prevented the noise from being heard in the “silent” parts of the track. To eliminate the noise, you would use a Noise Reduction process in an audio editor or Logic Pro’s legacy Denoiser. Results will vary when trying to eliminate the noise entirely.