

Using the Avisoft-RECORDER Bat Call Filter

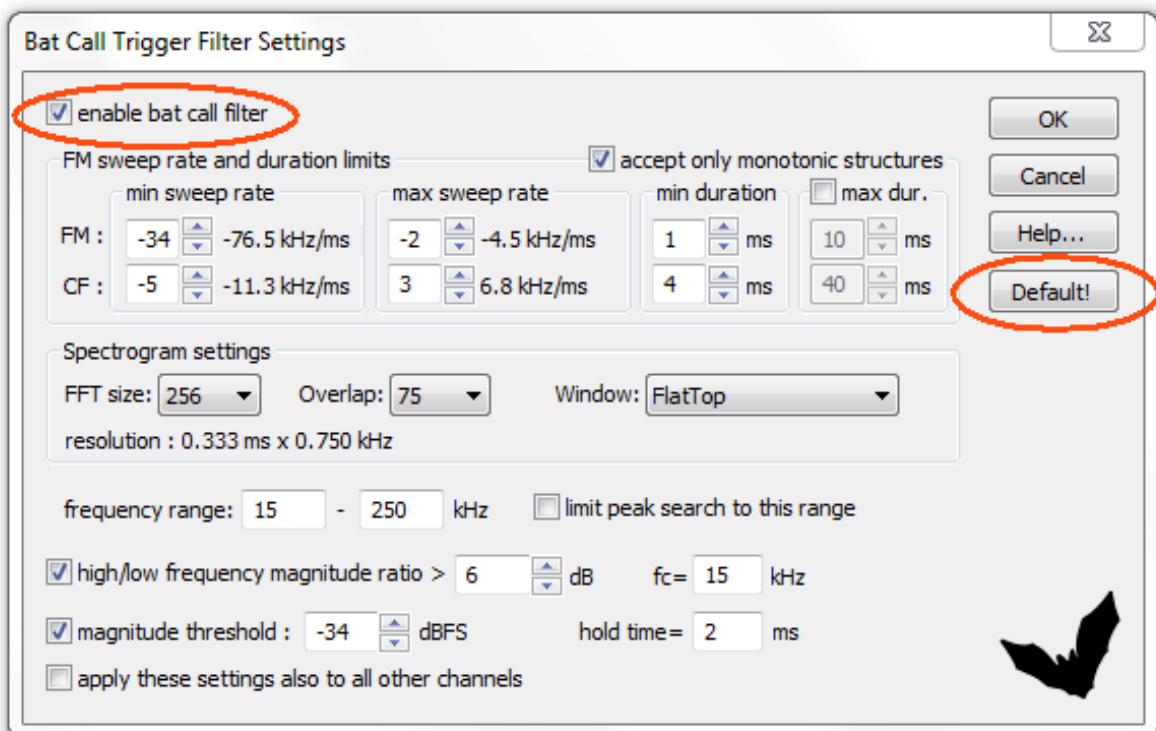


The Avisoft RECORDER software provides a mechanism that can reliably trigger on frequency-modulated and constant-frequency bat echolocation calls, while preventing triggering on broad-band noise, such as a wind or insect stridulations. This document describes how this functionality can be used.

The easiest way to set this functionality up is to use the corresponding preset command (**Options/Configuration management/Presets/Bat Calls/Bat Monitoring with bat call filter**). The desired preset can already be selected on the initial launch of the software when the configuration file (RECORDER.INI) still does not exist.

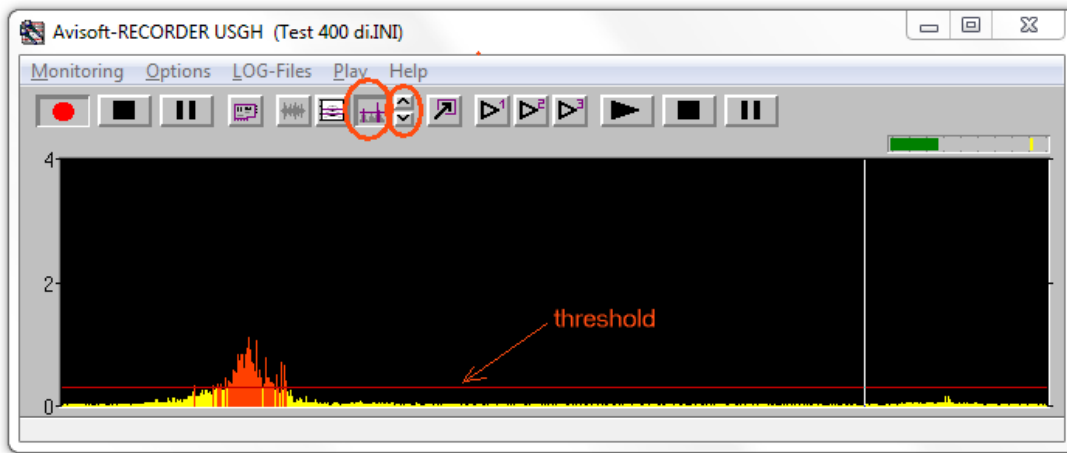
Otherwise, the Bat Call Filter can be configured either from the command **Options/Bat call trigger filter settings...** or the **bat call filter : Setup...** button on the **Configuration** dialog box.

Due to the relatively complex settings, it is recommended to start with default settings by clicking at the **Default!** button. These defaults, except perhaps of the **magnitude threshold** will work best for most applications. See also the chapter *Bat call trigger filter* in the [RECORDER software manual](#) (page 74) for details on the available settings.



The *magnitude threshold* [dBFS] corresponds to the *Trigger Event Level* [%] on the Configuration dialog box, which should be adjusted depending on the sensitivity of the microphone, the gain of the recording hardware and the desired sensitivity (lower values will also record softer or more distant calls).

The threshold can also be adjusted visually by mouse dragging, relative to the background noise floor. This is done by selecting the **energy in f-range** option from the **Display** listbox on the Configuration dialog box or the corresponding button on the main window:



The magnitude range can be adjusted by the up and down arrow buttons.

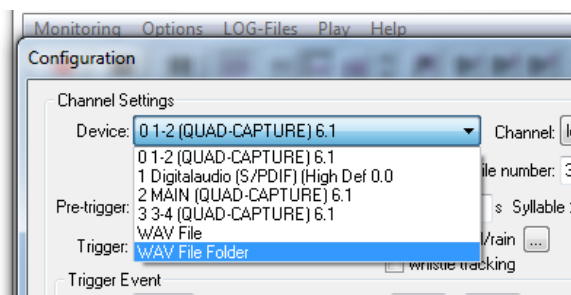
Trouble Shooting

Under certain conditions it might happen that the Bat Call Filter does not work as expected.

One potential problem can for instance be rain drops hitting the microphone rain protection roof. Depending on the material used, rain drops may cause sinusoidal oscillations (resonances) of the roof that are similar to real bat calls and could therefore also trigger a recording. If this happens, one should try to reduce these effects by either increasing the distance between the microphone and the roof or by covering the roof by sound-attenuating materials, such as felt or foam.

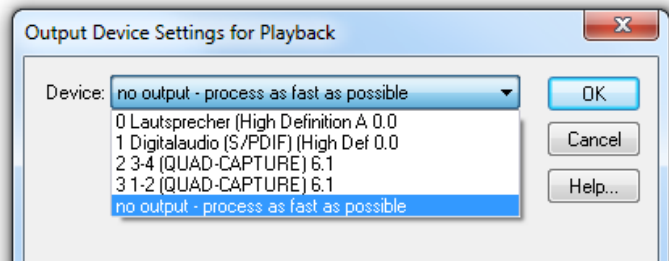
Applying the Bat Call Filter to existing .wav files

The Bat Call Filter can also be applied to .wav files that have been recorded by using other monitoring systems. This mode of operation can be activated by selecting the option **WAV File Folder** from the **Device** list box on the **Configuration** dialog box:

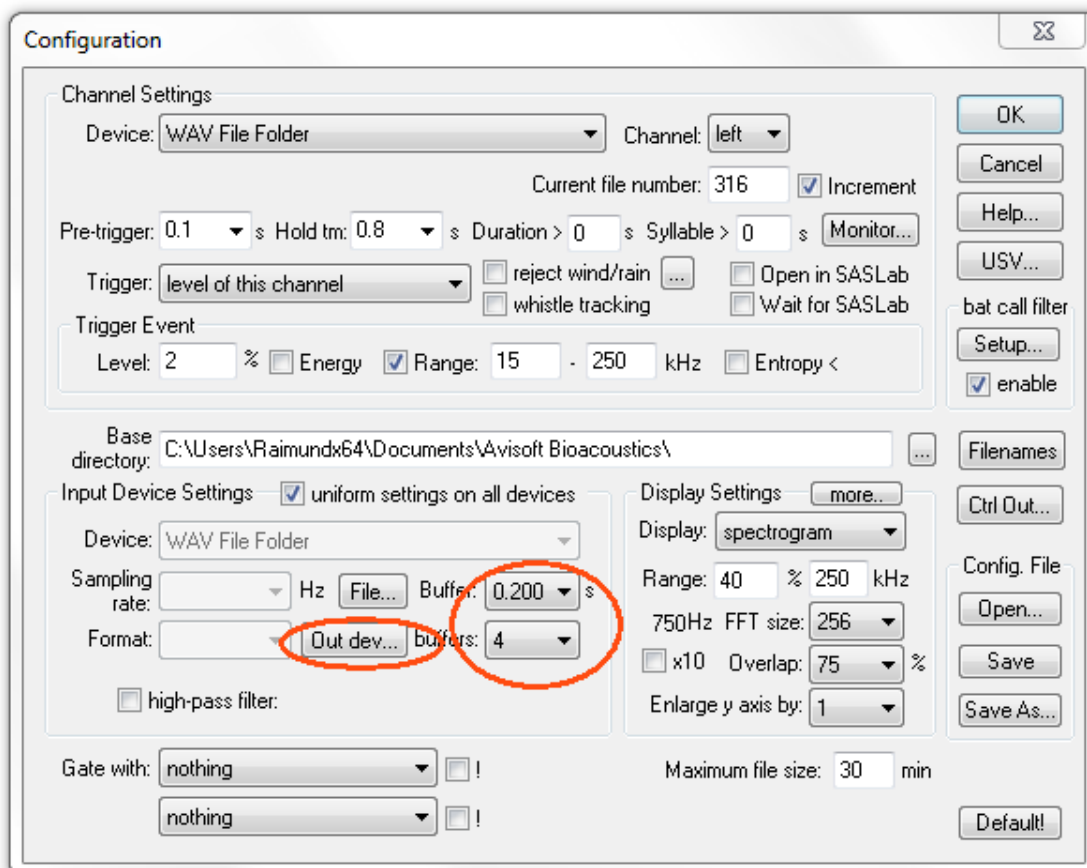


The command **Options / Configuration management / Presets / Bat Calls / Bat Call Filter on existing .wav file folder** will arrange all the required adjustments described here.

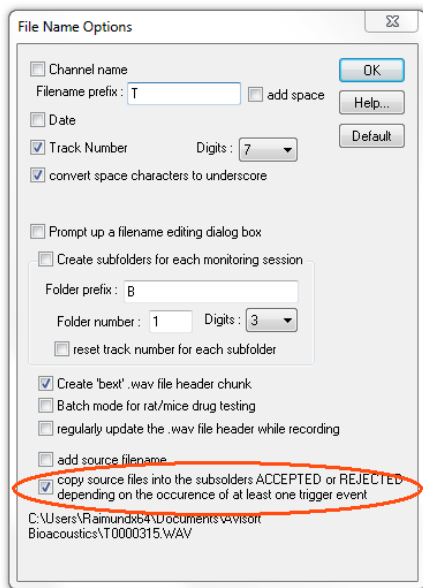
In order to ensure a fast processing, the option **no output – process as fast as possible** should be selected from the **Device** listbox on the **Output Device Settings** dialog box (launched from the **Out dev...** button):



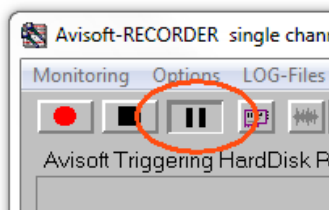
In addition to that, the **Buffer** should be set to a sufficiently large value (very short buffers will slow-down the processing). The number of buffers should be set to small value, such as 2 or 4:



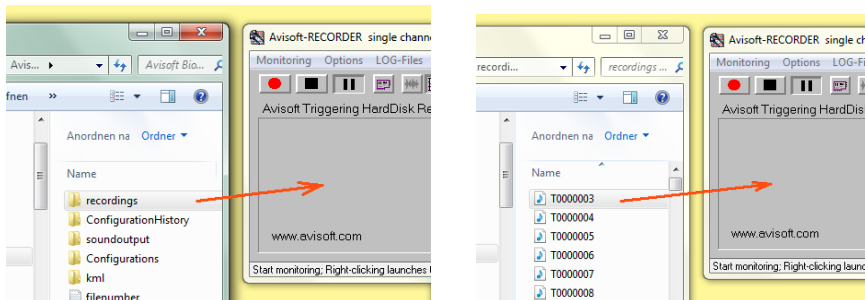
In case the .wav files to be processed are all short (up to a few seconds only), it would be appropriate to just sort the original .wav files to be examined into separate subfolders (ACCEPTED and REJECTED). This mode of operation can be set up from the command **Options/File naming... :**



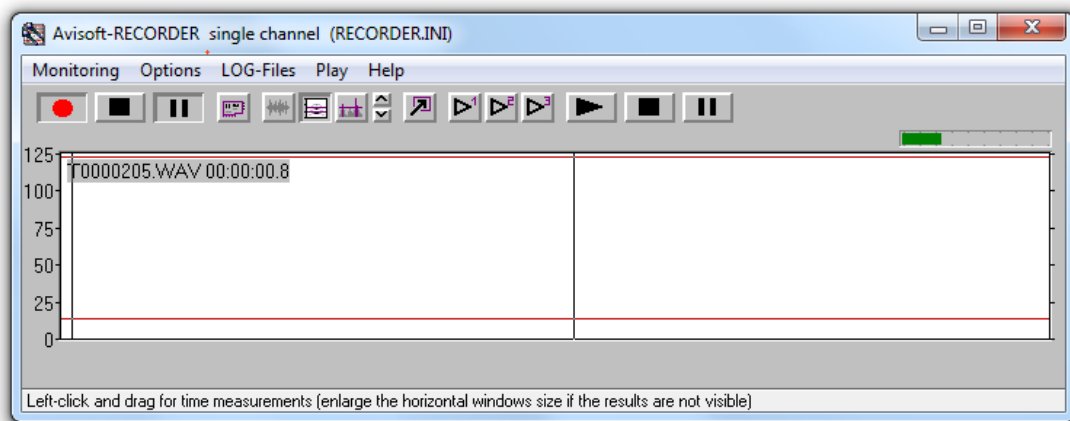
Under these conditions, the pause button should be activated in order to prevent saving additional (triggered) .wav files:



The batch process can then be started by dragging the folder containing the recordings into the RECORDER program window. Alternatively, one of the files in the folder can be dragged:



The software will then batch-process all the files in the selected folder (and its subfolders) and copy them depending on the occurrence of at least one bat call (trigger) into the subfolders titled ACCEPTED and REJECTED:



Name	Tit...	Titel
ACCEPTED		
REJECTED		
T0000003		
T0000004		
T0000005		
T0000006		

The batch process can be terminated prematurely by clicking at the stop button (Monitoring/Stop).

In case the batch processing should be repeated with different settings on the same folder, the two folders ACCEPTED and REJECTED should be renamed or deleted before.