Configuring Avisoft-SASLab Lite for the real-time spectrogram recording mode

Launch the real-time spectrogram window from the command File/Real Time Spectrogram...

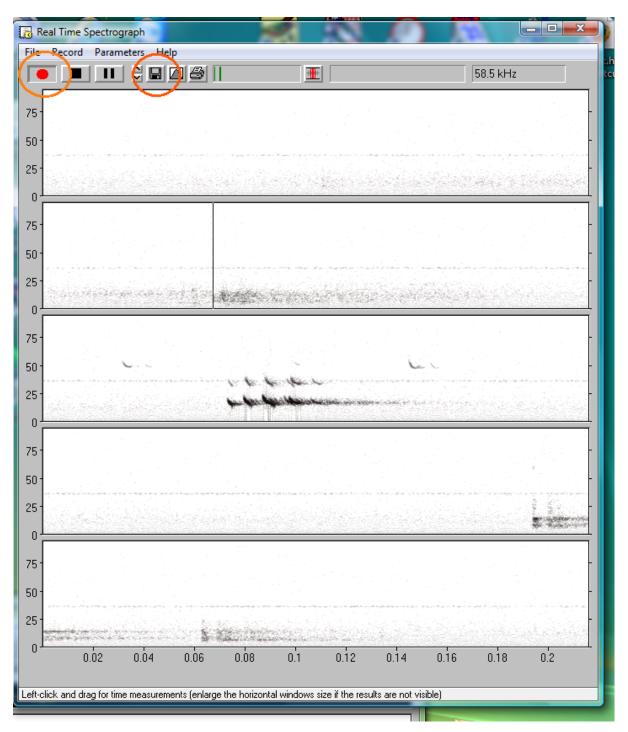
Select the desired sample rate from the real-time spectrogram window command Parameters/Sound Card Settings... :

| Sound Card Settings | × |
|--|---------|
| Sampling Frequency : 192000 🔻 Hz | ОК |
| Number of Bits : 16 💌 🗖 Stereo | Cancel |
| Down-sampling by : 1 ▼ = 192000 Hz | Help |
| Duration of Recording : unlimited (2GB) | Display |
| Perform off-line Sampling-Frequency conversion (according Edit/Sampling Frequency Conversion) | |
| Overload if sample >= 30000 LSB | |
| Active Sound Card: | |
| 0 Microphone (2- E-MU 0404 USB) 1.0 - | Default |

And perhaps adjust the spectrogram settings from Parameters/Sound Card Settings... and the circular buffer size from Parameters/Buffer Size...:

| Realtime Spectrogram Pa | rameters | X |
|---|--|----------------------|
| B/W-Display Color Display Frequency Resolution: FFT Length: 256 ▼ Frame [%]: 100 ▼ Window : Hamming ▼ Bandwidth : 975 Hz Resolution : 750 Hz Temporal Resolution: Overlap [%]: 75 ▼ 1/Bandwidth : 1,1 ms Resolution : 0.33 ms | Display: Threshold: 5 (Intensity) Color Palette: gray.pal • Gradation: char1.grd • y-scale 1 • Sampling frequency: 192000 • Hz / 1 • = 192000 Hz | OK Cancel Help |
| Buffer Size | × | <u>,</u> |
| Buffersize [kByte] : [1 | 1024 🔻 🛛 🔿 🗸 | |
| Buffer duration : | 2.7 s Cancel | |
| Refreshing interval [%] : [1 | 100 🔹 Help | |
| Enable USG DI trigge | | |

Then click at the red recording button, which starts to fill the internal circular buffer (just like in a conventional time expansion detector):



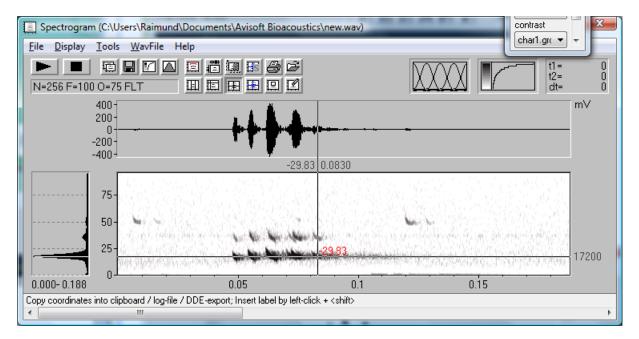
Once you have captured a bat call, click at the disk button (or use the keyboard shortcut Ctrl+S) to save the current content of the circular buffer into the main window of SASLab Lite



The spectrogram display contrast can also be adjusted from the two vertical arrow buttons.

| new.wav * - Avisoft-SASLab Lite 'DEFAULT.INI' | |
|---|----------------------------|
| <u>File Analyze Edit Tools Actions M</u> etadata Help | |
| ● ► ■ □ □ ▷ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ | t1 = 0 t2 = 0 dt = 0 |
| | |
| | |
| n fan de stearten. Nederlike Meanten en servere | |
| 00:00:00.1 00:00:00.2 00:00:00.3 00:00:00 | .4 00:00:00.5 |
| < | 4 |

Use the main window command Analyze/Create Spectrogram to create a higher resolution spectrogram window on which you can measure call parameters:



There are various ways for measuring time and frequency parameters, including also more sophisticated automated tool s (Tools/Automatic Parameter Measurements/ Automatic Parameter Measurements Setup...)

In order to simplify the operation of the laptop or tablet PC in the field, the software can be configured in such a way that it immediately starts the real-time spectrogram display after booting the computer, so that no additional user input would be required.

This mode of operation can be setup as follows:

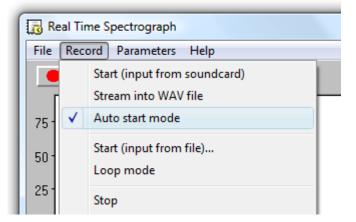
1. Add a link to Avisoft-SASLab Lite to the Windows Startup folder (right-click at Startup and select 'Open All Users'):

| C | Collapse | | 🕒 Organize 🕚 | - 💷 \ | /iews 🔻 п Open 🚷 E | Burn | _ | - | _ | |
|----------------|----------------------------|---|-----------------|-------|---|------------------|------------------|---|------|--|
| r4 c | + Open | | Favorite Links | | Name | Date modified | Туре | - | Size | |
| W E | Open All Users | | Document | s | Avisoft SASLab Lite | 02.04.2011 16:37 | Shortcut | | 2 KB | |
| | xplore All Users Velete | E | Music More » | | | | | | | |
| R | lename | - | Folders | ^ | | | | | | |
| Parch Brack | roperties | | | Short | oft SASLab Lite cout modified: 02.04.2011 16:37 | Date created: 1 | 17.03.2011 12:07 | | | |

2. Activate the SASLab Lite main window option Actions/On program start/Launch Real-time spectrograph:

| new.wav * - Avisoft-SASLab | Lite 'DEFAULT.INI' | | | X |
|----------------------------|-----------------------------------|---|--------------|-----------------------------------|
| File Analyze Edit Tools | Actions Metadata Help | | | |
| | On new sound file | + | | 0 |
| 192 kHz, 16 Bit | On program start | • | | Launch Recording level control |
| | Keyboard Shortcuts and Popup Menu | | \checkmark | Launch Real-time spectrograph |
| | | | | Launch Graphic synthesizer |
| | | | | Launch Real-time spectrum display |
| | | | | Open last sound file |
| | | | _ | |

3. Activate the Real Time Spectrogram window option 'Auto start mode'



Remote controlling Avisoft-SASLab Lite / Pro

It is also possible to control the recording procedure by using an external game pad. Once the game pad of joystick has been attached to the computer, make sure that it is properly recognized by the Windows operating system (Control Panel > Hardware and Sound >Game Controllers):

| M Game Controllers | × | |
|--|----------------------------|--|
| These settings help you configure the game your computer. | e controllers installed on | |
| Installed game controllers | | |
| Controller | Status | |
| Avisoft-UltraSoundGate 116 | ок | |
| | | Advanced Settings |
| | | Select the device you want to use with older programs. |
| | | Preferred device: |
| Advanced | | Avisoft-UltraSoundGate 116 |
| Advanced | <u>P</u> roperties | |
| | ОК | OK Cancel |

Then activate the option "Enable Joystick button #1 / USG button" on the Real-Time Spectrogram window command Parameters/Buffer Size... :

| Buffer Size | |
|---------------------------------|---------|
| Buffersize [kByte] : 1024 👻 | Ok |
| Buffer duration : 2.7 s | Cancel |
| Refreshing interval [%] : 50 🔹 | Help |
| Enable USG DI trigger | Default |
| Enable Joystick button #1 / USG | button |

This will transfer the current content of the circular buffer each time when the fire button (labeled **1** or **A**) is pressed on the game pad / joystick.

It is also possible to automatically save the buffers onto disk. This mode of operation can be activated from the Real-Time Spectrogram Window option "File"/"Save into numbered .wav file and increment":

| | R | eal Time Spectrograph | | | | | | | |
|---|--------------|--|--------|--|--|--|--|--|--|
| | File | File Record Parameters Help | | | | | | | |
| | | Transfer buffer into main window (and optionally save into file) | Ctrl+S | | | | | | |
| | \checkmark | | | | | | | | |
| | | Print Spectrogram | Ctrl+P | | | | | | |
| ľ | | Save Spectrogram | | | | | | | |
| | | Copy Spectrogram | Ctrl+C | | | | | | |

This will save numbered .wav files (named Txxxxx.WAV), each containing the current content of the circular buffer, into the folder <username>/Documents/Avisoft Bioacoustics.

Once this mode of operation has been activated, the touchscreen or keyboard of the Tablet PC, netbook or UMPC could be locked, which would then avoid unwanted actions while carrying around the computer in the field.

Suited compact gamepad models would be for instance these ones:

