Setting up the Roland QUAD-CAPTURE audio interface for recording ultrasound

After installing the QUAD-CAPTURE device driver software first launch the **QUAD**-**CAPTURE** Control Panel dialog box from the Windows Control Panel (select the "classic view" or "large icons"), goto the command Driver/Driver Settings... and select the sample rate of 192000 Hz (note that this setting is saved on the physical USB device and not on the computer):

| QUAD-CAPTURE Driver Settings | euerung 🔄 Personalization | |
|--|--|--|
| QUAD-CAPTURE SAMPLE RATE: 192000 Hz CLOCK: INTERNAL | atures QUAD-CAPTURE Desktop Sound | |
| Audio Buffer Size | QUAD-CAPTURE Control Panel Driver Degice | |
| 1 2 3 4 5 6 7 8 9 | | |
| Audio Streaming Performance Real Time: 0000 Stability: 000000 ASIO Setting ASIO Buffer Size: 1024 samples (192000 Hz) VUse ASIO Direct Monitor | PREAMP COMPRESSOR U-OUT -CLP -6 -2 -6 -2 -12 -2 -12 -36 -12 -36 -24 -48 -60 -60 -48 -60 -60 -60 -12 -24 -48 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 -60 | MIXER OUTPUT1-2 = CLIP = - 2 - 6 - - 12 - - 24 - - 48 - |
| Windows sound Setting Match the sample rate with ASIO Revert Apply Show "README" Close | 2 PHASE -2 -6 -12 -6 -12 -2 -6 -12 -2 -6 -12 -2 -6 -12 -2 -6 -12 -2 -6 -12 -2 -6 -12 -2 -6 -12 -2 -6 -12 -2 -6 -12 -2 -6 -12 -2 -6 -12 -2 -6 -12 -2 -6 -12 -2 -6 -12 -2 -6 -12 -2 -6 -6 -12 -2 -6 -6 -12 -2 -6 -6 -2 -6 -12 -2 -6 -6 -2 -6 -12 -2 -4 -8 6 -6 -6 0 <th>C. INPUT 2 C. COAX (5/4) C.</th> | C. INPUT 2 C. COAX (5/4) C. |

On Windows Vista/7/8/8.1 the selected sample rate should then also appear on the Windows Control Panel (Start>Control Panel>Hardware and Sound>Sound>Recording>1-2 QUAD-CAPTURE>Properties>Advanced):

| 🐛 Sound | |
|---|---|
| Playback Recording Sounds | General Levels Advanced |
| Select a recording device below to modify its settings: | Default Format |
| Working | Select the sample rate and bit depth to be used when running in shared mode. |
| Line In High Definition Audio Device Working | 2 channel, 24 bit, 192000 Hz (Studio Quality) 💌 |
| Digital Input Device (SPDIF) High Definition Audio Device Working | Exclusive Mode Image: Second state of the s |
| QUAD-CAPTURE Working | Give exclusive mode applications priority |
| 3.4 QUAD-CAPTURE Working | |
| QUAD-CAPTURE | |
| <u>C</u> onfigure <u>Set Default</u> <u>Properties</u> | Restore <u>D</u> efaults |
| OK Cancel Apply | OK Cancel Apply |

On the RECORDER software, the QUAD-CAPTURE device "1-2 (QUAD-CAPTURE) 6.3" must be selected from the Device list box. Note that there are three individual logic devices associated with the Quad-Capture unit (*1-2*, *3-4* and *MAIN*), where only the *1-2* entry represents the two analog micropone inputs at the front panel. For single-channel operation, the left channel (which corresponds to the **INPUT 1L** microphone input socket on the front panelö of the unit) should be selected.

| Configuration | × |
|---|---|
| Channel Settinge Device: 21-2 (QUAD-CAPTURE) 6.3 Current file number: 1 Current file number: 1 Pre-trigger: 0.1 \$ Hold tm: 0.8 \$ Duration > 0 \$ Syllable > 0 \$ Monitor Trigger: level of this channel □ reject wind/rain □ 0 open in SASLab Trigger Event □ whistle tracking □ Wait for SASLab Trigger Event □ 15 250 kHz Entropy < | OK Cancel Help USV bat call filter Setup Y enable |
| Base directory: C:\Users\Raimund\Documents\Avisoft Bioacoustics\ Input Device Settings Iniform settings on all devices Display Settings more Device: 2 1-2 (QUAD-CAPTURE) 6.3 Display: spectrogram Range: 40 % 250 kHz Sampling rate: 192000 Hz Buffer: 0.100 s 750Hz FFT size: 256 high-pass filter: Number of buffers: 4 X10 Overlap: 75 % | Filenames Ctrl Out Config. File Open Save Save As |
| Gate with: nothing Image: size in the siz | Default! |

The sampling rate of 192000 Hz must be selected here as well:

In order to provide power to the Avisoft ultrasound microphone, it is necessary to set the **PHANTOM** switch on the back side of the audio interface to the **48V** position. The **GROUND LIFT** switch should be set to the **NOR** position and the **Hi-Z** (**INPUT 1**) to the **OFF** position.



The USB audio interface has two microphone inputs (*INPUT 1L* and *INPUT 2R*). It is therefore necessary to attach the microphone to the correct input channel. This would usually be **INPUT 1L** if the (default) *left Channel* has been selected from the above Configuration dialog box of the RECORDER software.