## 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.