

User Guide

Skin Conductance

This user guide has been created to educate and inform the reader about doing skin conductance measurements

For more information about NeXus, our BioTrace+ software, please visit our website or contact us.

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Introduction

This manual provides a step-by-step review of how to do Skin Conductance measurements with the NeXus-4, NeXus-10 or NeXus-32. The manual provides information about the required hardware, preparation and measurement steps, artefacts (appendix 1), and care of materials (appendix 2).

Required Equipment

The following is required to perform skin conductance measurements:

- Nexus-4, NeXus-10 or NeXus-32
- Skin Conductance Sensor
- Skin Conductance electrodes (Ag/AgCl)*

** The Velcro skin conductance electrodes need to be replaced after a while, since the Ag/AgCl will wear off. Replacing the electrodes after 100 times is recommended.*

Skin conductance measurement setup

Before the actual measurement can start, the equipment has to be connected. Detailed information on setting up the NeXus can be found in the NeXus User Manual or Quick Start.

Connect the Skin conductance sensor to input C of the NeXus-4, input E of the NeXus-10 or input 29 of the NeXus-32. Make sure the red dot of the connector is facing downward with the NeXus-4 or NeXus-10 or upward with the NeXus-32.



Sensors can be disconnected by pulling the silver ribbed part of the connector backward.



Finger placement

Snap the Skin Conductance electrodes on to the snap-ons of the skin conductance sensor.



Usually the Skin Conductance electrodes are placed on the fingertips of the non-dominant hand, at the palmar side of the fingers. Try to standardize which fingers are used.

Place the Skin Conductance electrodes on the fingertips of the non-dominant hand and secure the electrodes with the velcro straps. Do not tighten the velcro straps too much as this will restrict blood flow. To avoid accidental touching of both electrodes (and thus interference with the signal), one can choose two non-contiguous fingers.



Alternatively place the Skin Conductance electrodes on the middle phalanges (middle of the fingers) of the non-dominant hand, at the palmar side of the fingers.



Optionally secure the cables to the hand with some tape to avoid movement artifacts.

In extreme cases the skin may be too dry for the sensor to pick up a signal. In that case applying some gel or using hand palm placement is recommended.

Hand palm placement

Snap special disposable Skin Conductance electrodes on to the snap-ons of the skin conductance sensor.

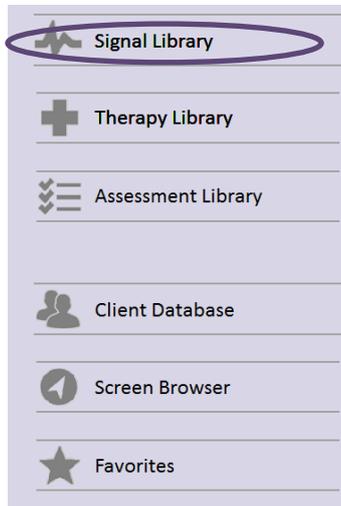
Place the Skin Conductance electrodes on the hand palm.

BioTrace+

Start the BioTrace+ Software.



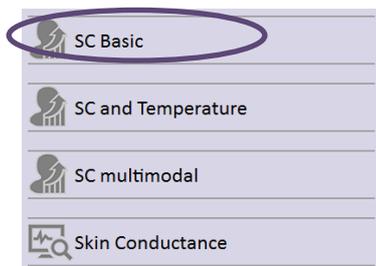
Select **Signal Library**.



Select **Skin Conductance**.



Select your preferred measurement screen (e.g. Skin Conductance Basic).

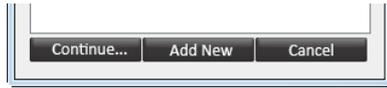


Switch the NeXus on.

Click the **recording** button.

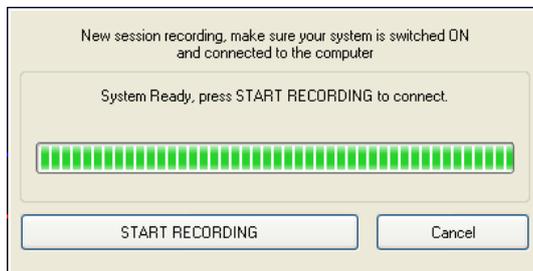


The *select a client* dialog box will appear.

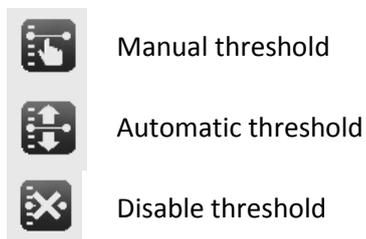


Select a client and click **Continue...** or click **Add New** for adding a new client.

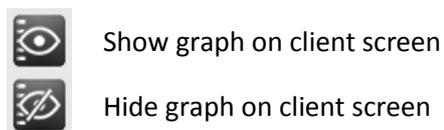
The *New session recording* screen will appear. Click **Start Recording** to start recording a session.



Set threshold setting controls of a bar graph.



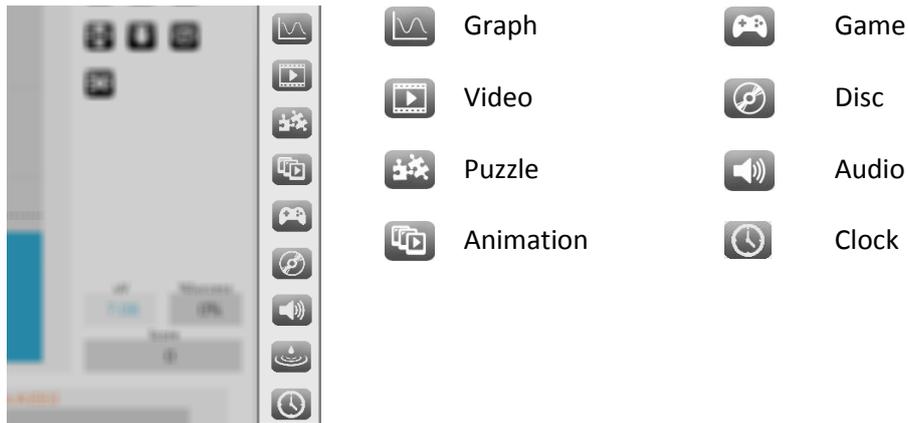
It is possible to show and hide the bar graph feedback on the client screen



Feedback Type Controls are shown on the right side of a training screen.

Press the Windows logo key  +P for extending display to dual monitor setup

Select one of the feedback options that are available on the right side.



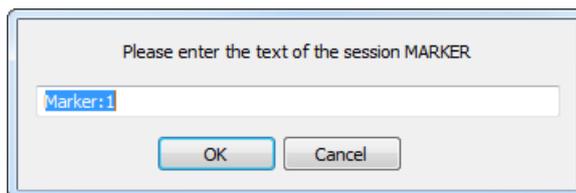
Select other content during a recording by clicking the change feedback icon in the right top corner. This can only be used with videos, animations, games, puzzles, and audio.



Markers can define a certain event during a recording. These markers can be added manually by pressing *the marker symbol in Session controls in the left bottom corner* (or by pressing **Enter**):



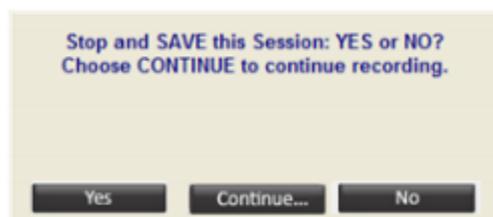
The following dialog box appears for naming markers.



In order to stop the recording, click the **stop** button.



An alert box will appear.



Click **Yes** and save the session and enter a description of the session.

Enter your description line for this session

Confirm by clicking **OK**, the session is now saved.

Appendix 1: Artifacts

- **Movement artifacts**
Be aware that pulling on the cables and electrodes leads to movement artifacts.

Appendix 2: Care of materials

NeXus Skin Conductance sensor cleaning

The NeXus Skin Conductance sensor can only be cleaned. There are no procedures or prescriptions for disinfecting.

The sensor cables and snap-ons tip can be cleaned with lukewarm water or alcohol prep pads (do not submerge in water or in alcohol solution).

Please avoid cleaning the connector, as this may affect its performance.

Electrode (Ag/AgCl) cleaning

Electrodes can be cleaned with lukewarm water.

Do not use abrasive or sharp objects which may result in permanent damage of the electrodes.

The Velcro straps (note: not the electrodes itself) can be cleaned with a soapy hand wash, preferably at a low, lukewarm temperature. Please note that the skin conductance electrodes need to be replaced after a while, since the Ag/AgCl will wear off. Replacing the electrodes after 100 times is recommended.