

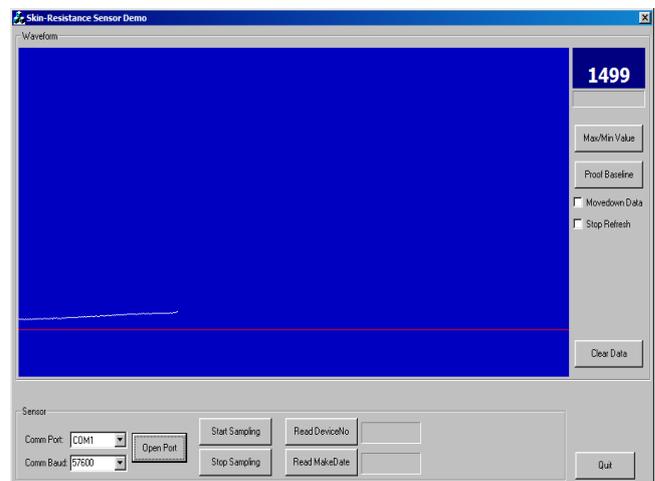
## Rui Skin Resistance Sensor (RSRS-11C)

### User Manual

#### Abstract

Rui Skin Resistance Sensor (RSRS-11C) is a light, precise sensor for Skin Resistance, or Skin Conductivity, which varies depending on the amount of sweat-induced moisture on the skin. Skin conductance is used as an indication of psychological or physiological [arousal](#). Therefore RSRS-11C can be used as an indicator during Neurofeedback sessions, so that it helps therapists to find out the optimized training methods, training frequency and training positions. The manual includes the followings:

- Function and parameter of RSRS-11C
- Installation guideline of RSRS-11C
- How to use RSRS-11C during Neurofeedback sessions
- Trouble shooting





## 1. Function of RSRS-11C

RSRS-11C skin resistance sensor measures people body skin resistance change signal with external current incentives. The sensor uses a precision operational amplifier, and outputs the high precision physical skin resistance change. It is small and convenient. It can be widely used in various skin resistance analysis systems.

### 1.1 Technical Parameters

Physical connection: USB

Power: USB powered

Value Range: 100KiloOhm -2.5 MegaOhm (!!! Attention, the unit here is not microsimense)

Accuracy: 2.5K

Error: +/- 2%

Sampling frequency: 50Hz

Communication Baud Rate: 57600

Interface: full-duplex serial communication interface, a start bit, 8 data bits, 1 stop bit, no parity

## 2. Software Installation Guideline

Rui\_SRS\_11C\_Package.zip includes all drivers and the display program, unzip it to your hard disk, suppose to the directory "Rui\_SRS\_11C\_Package". In the document, we will refer paths from the directory "Rui\_SRS\_11C\_Package".

### 2.1 For Windows XP, Windows 2003, Windows Server, Windows Vista and Windows 7 (32bits or 64 bits)

- Step 0: Plug RSRS\_11C into a USB slot of your PC.
- Step 1 : Run the Setup program with the administrator right:  
Rui\_SRS\_11C\_Package/CP210x\_VCP\_Win\_Xp\_S2K3\_Vista\_7\_Setup.exe.  
Follow the instructions of the setup, the drivers of RSRS\_11C will be installed.
- Step 2: Start Device Manager, a new device "Silicon Labs CP210x USB to UART Bridge (COMx) " under Ports (COM&LPT) will be found. This is RSRS\_11C. See diagram 1. Click the device, the properties of the device will show up, in the tab "port Settings", set the baud rate to 57600. See Diagram 2. Click the "Advanced" button, check the port number. If the port number is not between COM 1 to COM16, change it to an unused port between 1 and 16 (because the RSRS-11C display program accepts only port number from 1 to 16). See diagram 3.

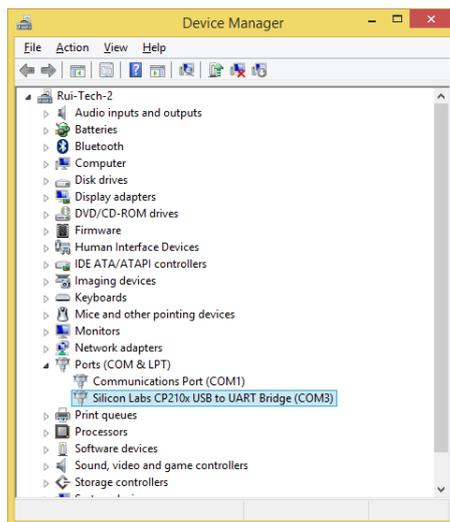


Diagram 1: RSRS-11C in the Device Manager

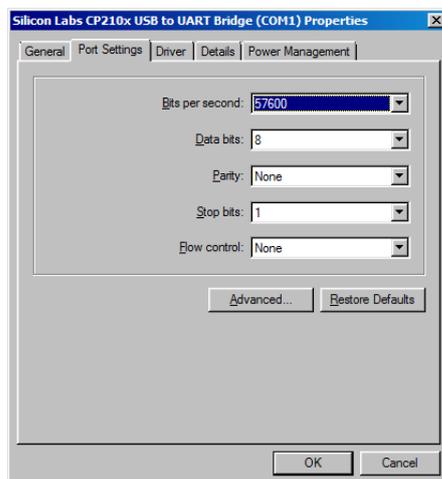


Diagram 2: Set baud rate of RSRS-11C

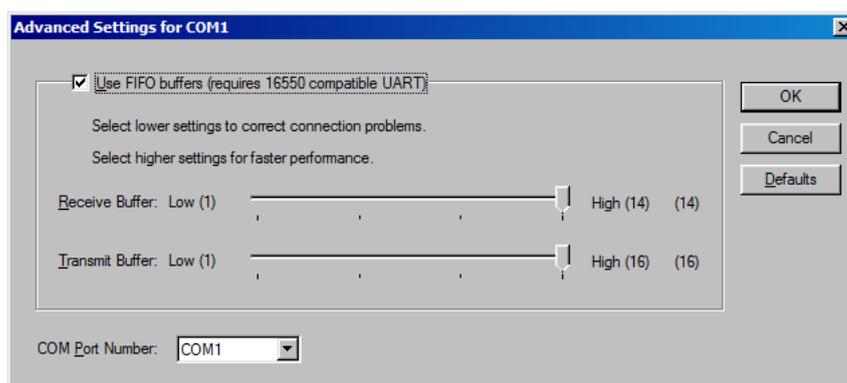


Diagram 3: change port number to a number between COM1 and COM16.

- Step 3: Run the display program  
Rui\_SRS\_11C\_Package\En\_Demo\SRDemoEn.exe, Select the Baud Rate und port number set by the setp 2. Click “open port” button, then click

“start sample”. Because no contact to fingers, the value “1” (means upper limit) shows up.

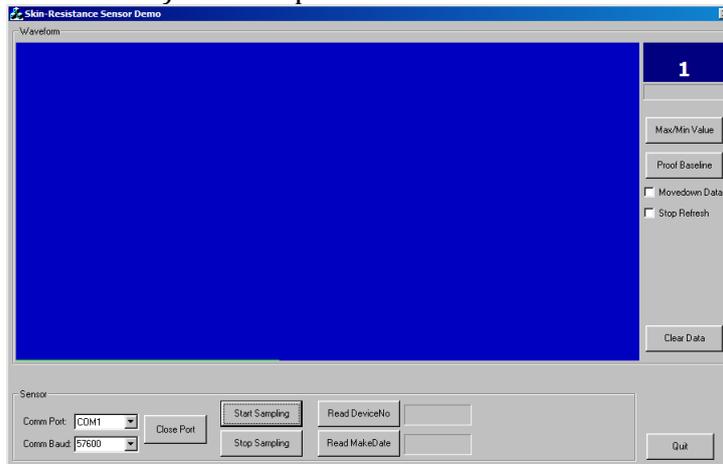


Diagram 4: start to measure skin resistance

4. Clean the index finger und middle finger, put the clips on the two fingers, the Skin resistance shows up in the window.



Diagram 5: Clip index and middle finger to measure

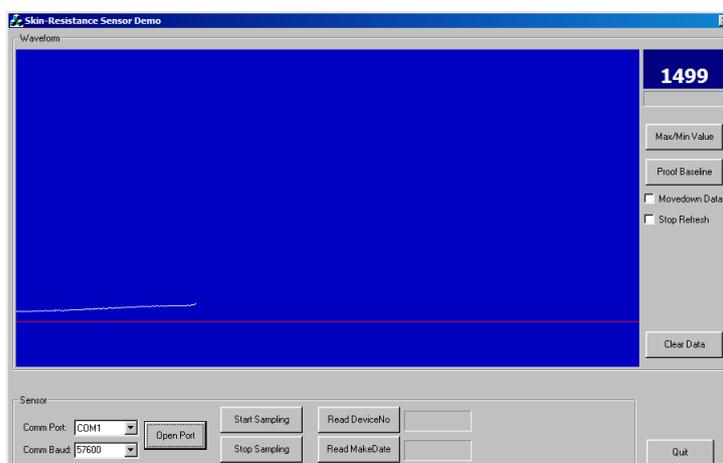


Diagram 6: Measure Skin Resistance (with Baseline)



## 2.2 For Windows 8

- Step 0: Plug RSRS\_11C into a USB slot of your PC.
- Step 1: install USB Drivers
  - For 32-bits Windows 8, run  
Rui\_SRS\_11C\_Package/USB\_Drivers/Driver\_8/CP210VCPInstaller\_x86.exe.
  - For 64-bits Windows 8, run  
Rui\_SRS\_11C\_Package/USB\_Drivers/Driver\_8/CP210VCPInstaller\_x64.exe.

Just follow the instructions of the setup program, the driver will be installed.

- Step 2 – 4: Set baud rate, port number and start display program, same as chapter 2.1.

## 3. Use RSRS-11C During Neurofeedback Sessions

Please refer to the “Experience Sharing” document from the RUI-Tech GmbH: [Neurofeedback Training and Skin Resistance](#).

## 4. Trouble Shooting

### 4.1 The display program SRDemoEn.exe does not run

SRDemoEn.exe needs mscom32.ocx. Please follow the steps to register the ocx.

- Step 1: start command prompt with admin
- Step 2: In the command prompt, change the directory to  
Rui\_SRS\_11C\_Package\En\_Demo
- Step 3: Run setup.bat (This batch file registers mscom32.ocx).

Then start SRDemoEn.exe again.

### 4.2 The display program shows value “1”

“1” means too big resistance to handle. The normal reason is that no good contact to the sensor, too dry skin. This can be easily solved by wiping fingers and contact sheet with wet tissue.