



Introduction

Dear customer!

Thank you for your decision to use the Qiu. With the Qiu you have got a forward-looking medical device, developed from medical doctors in year-long research.

You will find information how to use the Qiu-software on the following pages. Please read the manual of the Qiu device first to get an impression, what the Qiu does and how it works.

The Qiu can be used as a stand alone device, it is not necessary to connect the Qiu to the PC in order to perform biofeedback exercises. The Qiu software provides additional features for configuration and data management. With the software you can configure the Qiu easily by your PC. All your measurements can be managed by the software and for instance can be send by email to your therapist.

Software installation

The Install CD has got an autostart function, which starts the installation when the CD is inserted. If the autostart is deactivated on your system, you can start the installation manually:

- Open the windows explorer and switch to your CD drive
- Double-click on the 'Setup.exe' file in order to execute
- Follow the instructions of the installation manager

Software deinstallation

Click on 'Start', 'Programs', 'BioSign', 'Deinstall Qiu' in order to remove the software from your system.

PC-Hardware-reuirements

- Operating system: XP/Vista/Windows 7
- PC ab 400 MHz
- USB
- CD-Drive
- at least 300 MB free disk space
- The Qiu device must only be connected to a PC provided with the CE label!

Connect the Qiu

Insert the Batteries and connect the Qiu with the PC by means of the USB-wire. The Qiu starts up automatically, when it is connected with the PC. It also terminates automatically, when the connection detached. It is not necessary to turn the Qiu on or off separately.

Note:

The Qiu is switched on, no matter the Qiu software runs and subsequently battery power will be consumed, because the device uses its own power supply for safety reasons. Therefore keep the connection time as short as possible and unplug the Qiu, when you quit the Qiu software.



Installation of the device drivers for the Qiu

Your PC needs a special driver in order to communicate with the Qiu device properly. The driver will be copied on your system during the installation and will be installed automatically, when you connect the Qiu the first time. This could take several minutes. If the driver is not installed on your system automatically, you can install it on your own. Please open the windows explorer and go to the '\\Qiu/Driver' directory. Execute the driver setup program.

Start the Qiu software

Double-click on the Qiu symbol on your desktop. You might also start the software with 'Start/Programs/BioSign/Qiu'.

Registration

The Qiu can manage up to 5 user. It is therefore necessary to sign in. Select your user name and press 'ok'. If the software is executed the first time there is no user in the list. Select 'Add user' and enter your data.

Assign Qiu to a user

If you connect a Qiu the first time you will get the message, that the Qiu is not assigned to a user. In this case please select the item 'Assign Qiu' from the 'Qiu' main menu in order to start the assignment window. There you can assign the Qiu to a user.

You will be asked to delete the Qiu's memory, if the Qiu was newly assigned. It is recommended to do so, when the Qiu has been used by a different user before. Otherwise the measurements of the previous user would be falsely downloaded later on.

Set date and time

Every measurement stored in the Qiu is provided with its measurement date and time. Therefore it is important to ensure a correct date and time of the internal Qiu clock. The Qiu software checks regularly the deviation from the PC clock. If the deviation is larger than one minute the Qiu clock will be automatically actualized by the Qiu software, provided this feature is activated in the system settings.

Select in the 'Qiu' menu the item 'Set Date Time'. The actual date and time of the Qiu and of your PC will be displayed. Press the 'Set' button to synchronize the Qiu with the PC. If you want to enter a date and time on your own, please select the 'Enter date / time' entry from the select box, make your entries in the fields below and press the 'Set' button to write the data on the Qiu.

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Configure Qiu

The Qiu can be configured either by the software or the device itself. The following settings can be made:

- menu 1: Target rhythmization
- menu 2: Brightness
- menu 3: Breathing settings
- menu 4: Exercise length



If you start a particular configuration, an intro is signaled optically on the Qiu picture, analogous to the intro of the real Qiu device. The intro helps to identify the particular configuration, if you make the settings directly on the device later on.

Target rhythmization

The target rhythmization determines the sensitivity of the biofeedback. The higher the target rhythmization, the higher your HRV has to be in order to gain a positive biofeedback. The target rhythmization menu can be identified by the biofeedback light changing from red to green and finally to a color determined by the actual target rhythmization. A single blue LED displays the actual target rhythmization by its corresponding number.

You should choose the target rhythmization carefully together with your therapist. In any case you should be able to reach a positive feedback (a green lighting of the Qiu) by means of relaxing and deep and calm breathing, without being stressed by the exercise. In case of doubt adjust a lower target rhythmization and increase it not until you reach a positive result regularly and easily.

Brightness

You might adjust the brightness of the biofeedback light here. You can choose between 7 steps (Led numbers 1 to 7) for the red / green biofeedback. Step 8 activates an intensity coded biofeedback. A low HRV is then indicated by no or only a weak lighting. High HRV is reflected by a stronger white lighting.

This menu can be identified by the green biofeedback light changing from low to high intensity.

Breathing

In this menu you can adapt the breathing rhythm to your needs. The intro sequence of this menu is a single blue light running from left to right and backwards. The actual setting is indicated by the corresponding number of a single blue LED. You can select by the following settings.

- 1: Respiration aid is turned off
- 2: A special breathing pattern can be programmed and stored in the Qiu by means of the Qiu software. This allows different times for breathing in and breathing out and the application of a pause between inhalation and exhalation. If this setting is activated, the programmed breathing rhythm will be provided.
- 3: No function
- 4: No function
- 5: 5 breathing cycles per minute
- 6: 5 breathing cycles per minute
- 7: 7 breathing cycles per minute (exactly: 6.6 /min)
- 8: 8 breathing cycles per minute (exactly: 8.5 /min)

If you select setting 2, you can define your own breathing rhythm and program the Qiu with it. The following settings can be adjusted:

- Pause before inhalation
- Duration of inhalation
- Pause before exhalation
- Duration of exhalation

Exercise length

In this menu you can adjust the time of the biofeedback exercise. If the time is expired, the Qiu will automatically stop the biofeedback. All recorded data will be stored and can be analyzed later on. The menu is introduced by an increasing and decreasing blue LED bar. The following durations can be applied:

- 1: 1 minute
- 2: 2 minutes
- 3: 3 minutes
- 4: 4 minutes
- 5: 5 minutes
- 6: 10 minutes
- 7: 15 minutes
- 8: 20 minutes

Erase memory

Use this function to delete the Qiu memory. It is recommended to do so, when the Qiu has been used by a different user before. Otherwise the measurements of the previous user would be falsely downloaded later on.

Note, that the Qiu memory is a cyclic memory. If the number of measurements exceeds 500, the recording starts again at the beginning and the oldest measurement will be overwritten.

Update firmware

Firmware is the software, which makes an embedded computer run. The Qiu contains such an embedded computer and needs therefore a firmware. As every software the Qiu firmware will be developed further and therefore an update feature is implemented to keep your Qiu actual.

If the automatic search is activated in the system settings, you will be informed every time a newer version of the firmware is available.

Please connect the Qiu in order to update its firmware. Choose the way of updating, internet or file, and follow the instructions of the software afterwards.

Qiu measurements

Select the menu item 'measurements' from the main menu and there the item 'Qiu measurements' in order to transfer and manage the measurements stored in the Qiu.

Download the Qiu measurements

Make sure that the Qiu is connected to the PC and press the button 'Download new measurements'. All new measurements will then be transferred into the Qiu database.

List of measurements

This table lists all transferred measurements in chronological order. You can add a comment to every entry. Mark a measurement in the list to delete or export it. If want to export a measurement, you can choose between a file export and a direct sending by email. The latter might be useful if you want to inform your therapist about your exercise progress for instance. The 'anonymizing' function is useful to remove your name and forename from the exported data if the data should be used for instance for demonstration purpose.

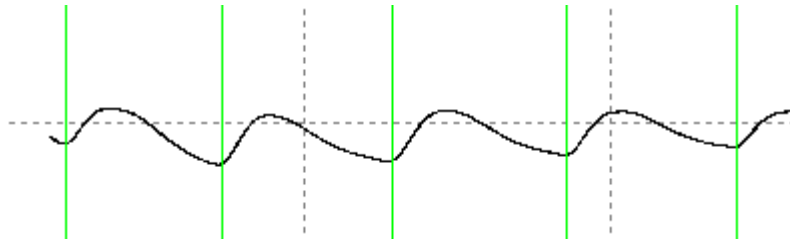
Note, that you can select more than one measurement from the list in order to delete or export. Just keep the 'strg' key pressed on your keyboard while clicking on the measurements with the mouse.

Heart rate diagram

If you click on measurement in the table, its heart rate trace is displayed in the diagram below. You can zoom the digram by drawing a frame around the area of interest with a pressed left mouse button. Click on the control labeled with a magnifier symbol in order to resize the diagram to its full length. Use the 'Min.' and 'Max' controls to scale the Y-axis.

Qiu Signal-Check

Use the menu item 'Qiu signal check' to start the real time recording. You can watch the pulse signal, the heart rate trace and the rhythmization degree in real time. This facilitates finding an appropriate sensor position in the user's hand. Take the Qiu in your hand and place the sensor on the thenar or a finger tip. After about 10 seconds you should see a clear pulse signal (see figure).



Example of a suitable pulse signal. The vertical green lines indicate the raise of the pulse waves and determine the onset of the heart beats.

If you don't see a pulse wave similar to the figure, please check out a different sensor position. You can see the real time heart rate trace below the pulse signal chart. The lowest diagram displays the actual rhythmization in real time, which becomes high when you improve your respiratory sinus arrhythmia. There are several settings next to the diagrams, which enable you to scale or hide the diagrams.

Add new user

Here you can add a new user. Please note, that you have to make entries in the fields 'name', 'forename', 'gender' and 'date of birth'. All other fields are optional. The Qiu software can manage up to 5 user. To each user there can be up to 3 Qiu attached.

Edit user

Here you can edit the user's data or revoke the assignment of a Qiu to this user.

Delete user

Select a user from the list in order to delete.

User list

A list of all users is provided. Click on the header of the columns in order to sort the list.

Change User

Select your user name from the list and enter your password, if you have activated the password protection. If there is no user registered, please add a user first.

Create Backup

Here you can backup all your data. You might also use this function to transfer data between several Qiu software on different PCs.

All data will be saved into the specified directory. An archive file will be created for every user. These files are named by the user name and the date of the backup. For instance 'Musterman_Max_25_04_2010..zip' contains all measurements of Musterman Max stored on the 25th of April 2010.

Restore backup

Here you can restore your data from a backup. You might also use this function to transfer data between several Qiu software installations on different PCs.

Note, that existing measurements will not be overwritten. User will be added automatically to the database, if they don't exist.

System settings

In the system settings you can make general settings for the Qiu software

Updates:

Enter the time interval in which the software should search for newer versions in the internet automatically. Note, that you can also execute the search manually or install a newer version from an update file.

Language:

You can set the language of the software here.

Show notes:

If this function is activated, you will get a hint, when you move the mouse over a button or a select box

Set date / time automatically:

This function ensures, that the system time of a connected Qiu is always checked and corrected, if necessary.

Search for new measurements in the Qiu automatically:

If this function is activated, the Qiu software will check the Qiu memory for new measurements every time the Qiu is connected.

Software-Updates

You can update the Qiu software directly from the internet, or install a newer version from an update file.

Internet update

You need your computer connected to the internet. The Qiu software checks automatically if a newer version is ready for download. If an update is found, it will be downloaded and installed automatically.

Update from an update file

If you don't have an internet access on your computer, you can conduct the update with an update file, which you have downloaded on another computer having an internet access.