

# Q-Rex Touch Software User Manual

Software for QIAquant® 96 real-time PCR thermal cycler



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# 1 Introduction

The Q-Rex Touch Software is designed for use in combination with the QIAquant 96 instrument for experimental design and instrument operation. The Q-Rex Touch Software provides a user-friendly interface to enable easy setup and monitoring of your qPCR experiment.

The Q-Rex Touch Software is streamlined to work together with the Q-Rex Software for data analysis, advanced sample layout setup, and workflow integration. It provides the user with an extra method of interaction with its QIAquant instrument using an intuitive touch interface.

## 1.1 Provided user manuals

The core application and the touch application, as well as every available plug-in, has its own user manual with specific information about the functionality of the different Q-Rex Software components.

The different user manuals can be accessed, read or printed as \*.pdf files.

- *Q-Rex Touch Software User Manual* provides a description of the Touch Software and its functions.
- *Q-Rex Software User Manual* provides a description of the PC software and describes functions that are common to the core application and all plug-ins.
- *Q-Rex Analysis Plug-in User Manuals* provide details on the use of specific plug-ins and their functionalities.

## 1.2 About this user manual

This user manual provides information about the functions and features of the Q-Rex Touch Software. Please refer to the *QIAquant 96 User Manual* for complete information about the proper care, maintenance and use of the QIAquant 96 instrument.

This user manual describes the features of the software and associated tools to enable you to manage and modify files.

Information about the Q-Rex Touch Software is provided in the following sections:

- Introduction
- Getting Started
- Basic Concept and General Software Use
- Manage Experiments and Templates
- Set Up an Experiment
- Run an Experiment
- Administrative Tasks
- Troubleshooting
- Appendices

The appendices contain the following information:

- License Terms
- Liability Clause

## 1.3 General information

### 1.3.1 Technical assistance

At QIAGEN®, we pride ourselves on the quality and availability of our technical support. Our Technical Services Departments are staffed by experienced scientists with extensive practical and theoretical expertise in molecular biology and the use of QIAGEN products. If you have any questions or experience any difficulties regarding the Q-Rex Touch Software, the QIAquant 96, or QIAGEN products in general, do not hesitate to contact us.

QIAGEN customers are a major source of information regarding advanced or specialized uses of our products. This information is helpful to other scientists as well as to the researchers at QIAGEN. We therefore encourage you to contact us if you have any suggestions about product performance or new applications and techniques.

For technical assistance, contact QIAGEN Technical Services.

### 1.3.2 Policy statement

It is the policy of QIAGEN to improve products as new techniques and components become available. QIAGEN reserves the right to change specifications at any time. In an effort to produce useful and appropriate documentation, we appreciate your comments on this user manual. Please contact QIAGEN Technical Services.

### 1.3.3 Version Management

This document is the *Q-Rex Touch Software User Manual*, revision 001, which provides information about the Q-Rex Touch Software, version 2.0.

Up-to-date Q-Rex core software, plug-ins, and user manuals are available for download at [www.qiagen.com](http://www.qiagen.com) or can be requested from QIAGEN Technical Services or your local distributor.

## 1.4 Intended use of the Q-Rex Touch Software

The Q-Rex Touch Software is a program for the operation of the QIAquant 96 instruments. The Q-Rex Touch Software is suitable for use with quantitative polymerase chain reaction (qPCR) and melt curve analysis in molecular biology applications, as well as for other applications performed on the QIAquant instruments.

The Q-Rex Software is intended for Molecular Biology Application purposes only.

The Q-Rex Software and the QIAquant instrument are intended for use by professional users, such as technicians and physicians trained in molecular biological techniques and in the operation of the QIAquant instrument.

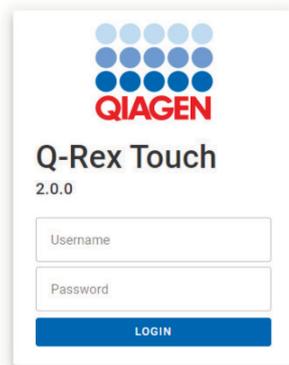
## 2 Getting Started

### 2.1.1 Switching on the QIAquant 96

Switch on the QIAquant 96 instrument at the main switch, located at the back of the instrument. The integrated tablet will power on, and the Q-Rex Touch Software starts automatically.

After successfully starting the QIAquant and Q-Rex Touch Software, you will be prompted to log in as administrator.

1. In the **Username** field, enter **admin**.
2. Leave the **Password** field empty.
3. Click **Login** to confirm.

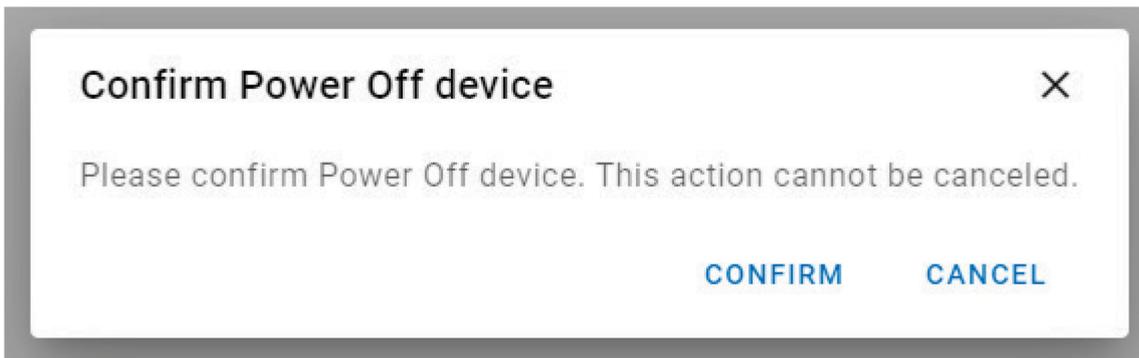


When logging in for the first time, you will be asked to set a new password. We highly recommend setting a strong password at this point to limit access to the default administrator account. Passwords can be set and modified at any time, including the administrator password. See “User management” section for more details.

### 2.1.2 Switching off the QIAquant 96

Switch off the QIAquant 96 instrument by using the main power switch located at the back of the instrument.

You also have the possibility to switch off the integrated tablet without switching off the instrument. This might be useful when operating the instrument via a connected laptop using the Q-Rex PC Software. Press the power button shown at the top right corner of the screen and the tablet will turn off. A conformation window appears asking the user the confirm turning off the touchscreen.

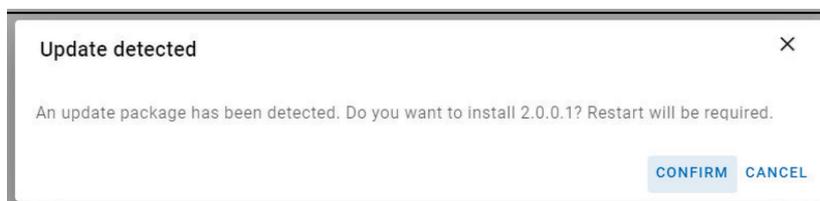


**Note:** The tablet can only be re-started upon switching off the instrument at the main power switch and switching it back on.

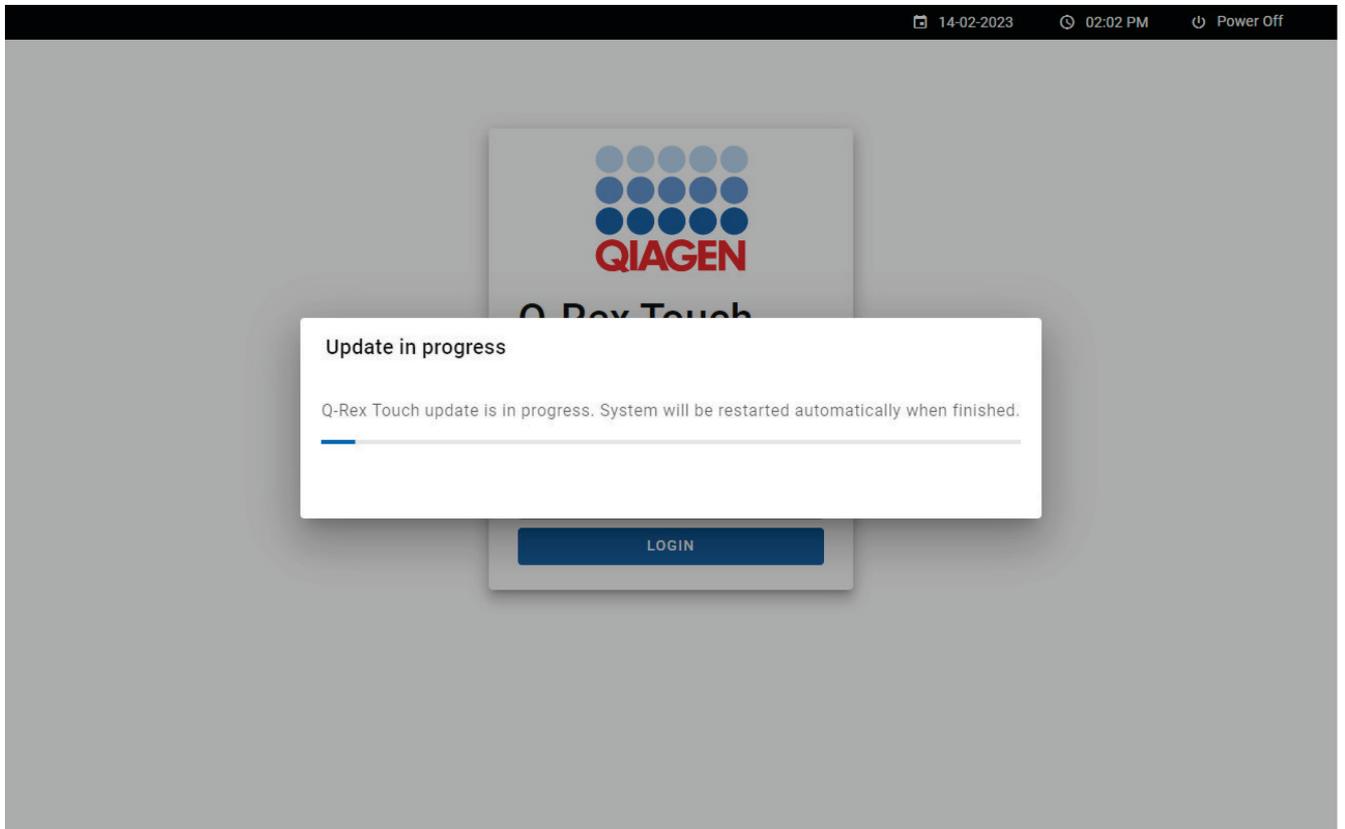
### 2.1.3 Update of software

When a new version of the Q-Rex Touch Software is available, it can be downloaded at [www.qiagen.com](http://www.qiagen.com) or can be requested from QIAGEN Technical Services or your local distributor.

To update your Q-Rex Touch Software to a newer version, transfer the installation file to the root folder of a USB drive and insert it at the respective QIAquant 96 instrument. The Q-Rex Touch Software can automatically detect any new software updates that are available on an inserted USB drive. Please note that the software will not detect any update files if these are located in folders or subfolders on the USB drive. Any user with the role of administrator will be shown the following notification if the software detects a newer version of the software in the root folder of the USB drive.



By selecting **CONFIRM**, the new software will be installed. This process might take a few minutes during which the instrument cannot be used.



After a successful installation, the touchscreen will reboot into the updated software.

## 3 Basic Concept and General Software Use

Basic concepts and general use of the Q-Rex Touch Software are explained in this section.

- Concepts
- General software use
- Q-Rex Touch workspace

### 3.1 Concepts

Q-Rex Touch Software builds on underlying concepts about:

- User roles
- Experiments and templates

#### 3.1.1 User roles

Access to certain Q-Rex Software functions is restricted to users with specific roles:

Role	Permissions
Operator	<p>The Operator may:</p> <ul style="list-style-type: none"><li>● Set up and run experiments</li><li>● Manage experiments and templates</li><li>● Change his or her own password</li></ul> <p>The Operator cannot create a support package.</p>
Administrator	<p>In addition to the permissions of the Operator, the Administrator may:</p> <ul style="list-style-type: none"><li>● Configure the system settings</li><li>● Manage users</li><li>● View the audit trail</li><li>● Download support packages</li><li>● Enable/disable the transport lock</li><li>● Change system date and time settings on the instrument</li></ul>
Service	<p>The Service user has the same permissions as an Administrator</p>

The functions listed above can be found in the following environments:

Environment	Tab	Description	Operator	Administrator Service
My Q-Rex	-	The user can access the <b>My Q-Rex</b> environment	+	+
Experiments	-	The user can access the <b>Experiments</b> environment	+	+
Service	System Audit Trail	The user can access the <b>System Audit Trail</b> tab in the <b>Service</b> environment	-	+
	Support Package	The user can access the <b>Support Package</b> tab in the <b>Service</b> environment	-	+
	Extras	The user can access the <b>Extras</b> tab in the <b>Service</b> environment	-	+
Configuration	Settings	The user can access the <b>Settings</b> tab in the <b>Configuration</b> environment	-	+
	User management	The user can access the <b>User Management</b> tab in the <b>Configuration</b> environment	-	+

### 3.1.2 Experiments and templates

Q-Rex Software distinguishes between experiments and templates.

An experiment summarizes all information related to a cyclor run, including setup information, raw and normalized data, analysis settings, results, and audit trail information (only setup information, raw data, and audit trail can be accessed via the Q-Rex Touch Software. To access all data, please refer to the Q-Rex Core Software). This information is stored in a single file with extension \*.qrex.

If you perform a similar experiment multiple times, it is useful to create a template, which you can use to set up experiments faster. A template can save all setup information including run profile, target definitions, sample groups and layout, as well as analysis, report, and export settings. Due to logical dependencies, there are some constraints to the information that can be stored in a template file (\*.qret):

- The run profile information is only saved if a plate type has been defined.
- Targets or a sample layout is only saved if an acquisition has been defined.
- Analysis settings are only saved if sample information and targets have been defined.

For more details, see “Manage Experiments and Templates” section.

## 3.2 General software use

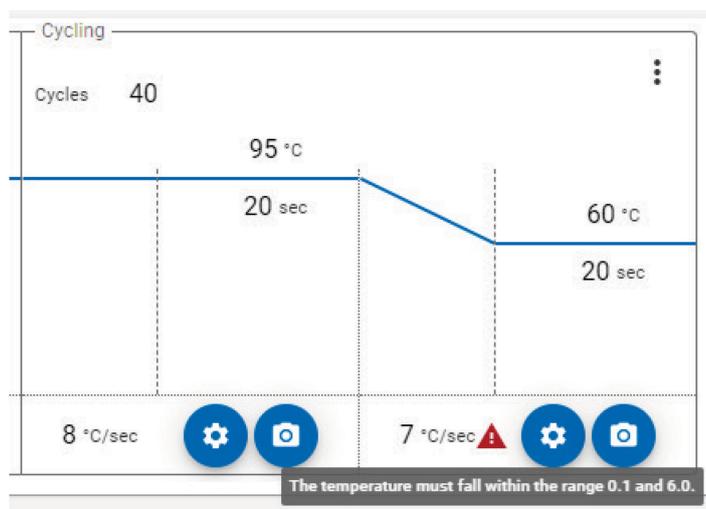
General software use concepts of the Q-Rex Software include standard ways of:

- Displaying errors and warnings
- General notifications
- Entering data

### 3.2.1 Displaying errors and warnings

Errors and warnings are essential information. These messages point to problems or errors that must be corrected or accounted for when interpreting results. Q-Rex Touch Software displays warnings in 2 different ways:

A red warning sign is displayed when an entered value is outside the recommended range. The warning icon appears next to the relevant entry field and a tooltip with the warning message is displayed when you tap the icon.

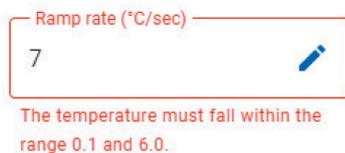


Furthermore, the step marker displays the red warning sign at the respective step to display that an action is required.



The entry field turns red when an entered value is outside the recommended range. A tooltip with the warning message is displayed below the entry field.

#### Step 2

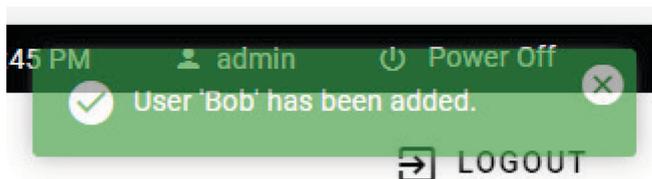


### 3.2.2 General notifications

In order to inform a user of events in the software, general notifications will be shown. These notifications provide the user with feedback on actions that they have started. The notifications appear in the top right corner of the screen and will disappear after a few seconds. The notifications are coloured based on the type of feedback the software provided.

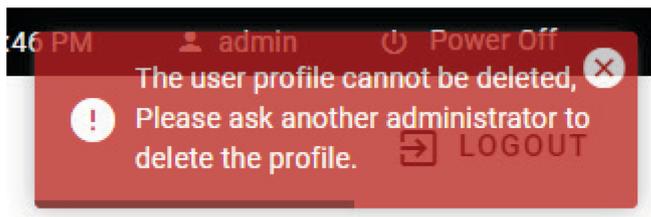
Notifications indicating that an action has been completed successfully are marked in green. Examples of successful notifications are:

- Saving of an experiment
- A successful file transfer
- Creating a new user



Notifications can also indicate to a user that something went wrong. These error notifications are marked in red and can inform a user when an action cannot be completed. Examples are:

- An error in saving a file
- Unsuccessful file transfers
- Problems with removing users
- Unexpected errors

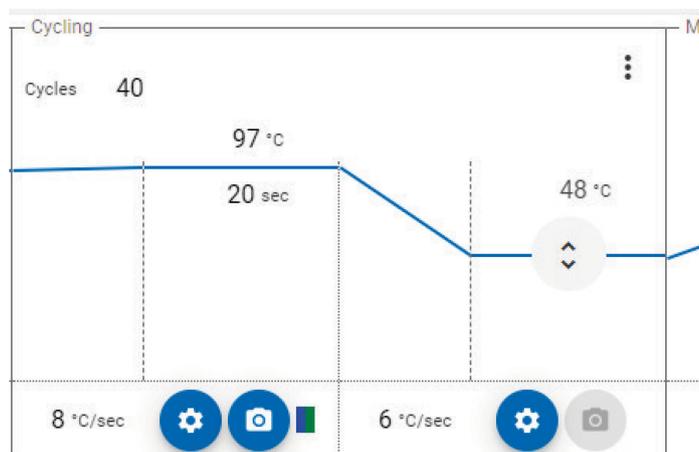


### 3.2.3 Entering data

There are different ways to enter data within the Q-Rex Touch Software, depending on the type of input.

If the user taps on an editable input field that is marked with a pencil icon, a virtual keyboard will appear on the screen. The layout of the virtual keyboard is dependent on what input is allowed in the selected field. For fields that expect a numerical input, a numerical virtual keyboard layout is shown. For input field that can have any characters as input, a standard alphanumerical virtual keyboard layout is shown.

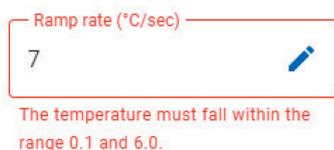
For convenience, the temperatures in the run profile can also be changed by dragging the lines in the cycling profile. When dragging, an icon will indicate what section of the temperature profile is changed. When releasing the screen, the new temperature will be set for that step and the temperature profile will be updated to reflect the changes.



### Validation of data entry

An entry field is highlighted with a red border when entered data are invalid. Below the entry field, more details about the validation error are displayed. The following screenshot shows an invalid entry in the **Ramp rate** field. The value entered is outside the specified range.

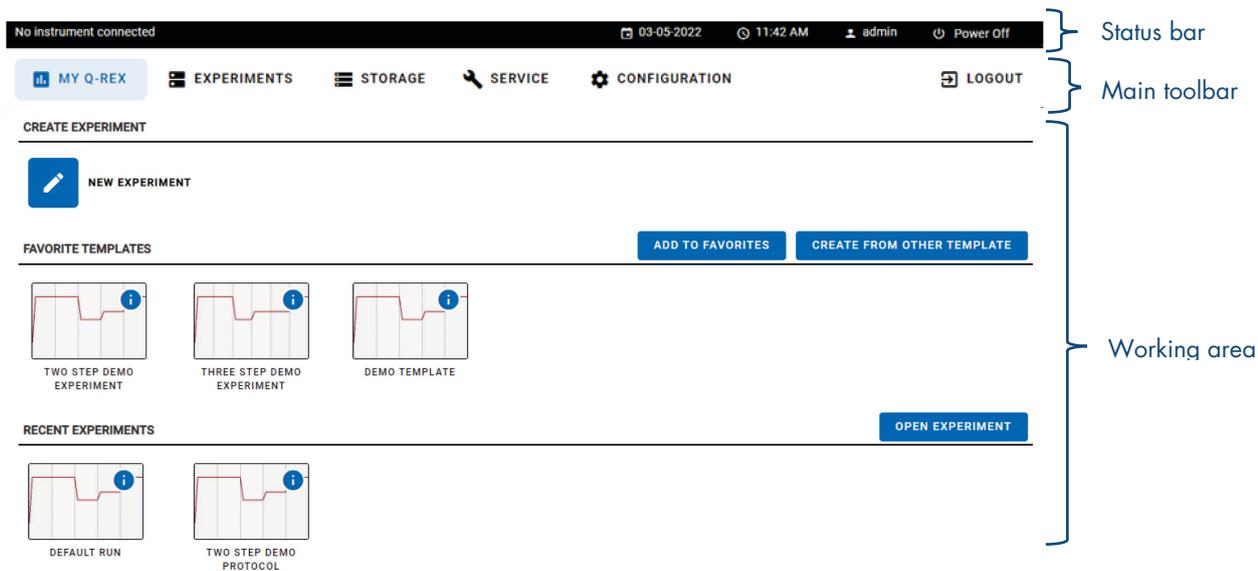
#### Step 2



## 3.3 Q-Rex Touch workspace

The Q-Rex workspace is divided into the following elements:

- Status bar
- Main toolbar
- Working area

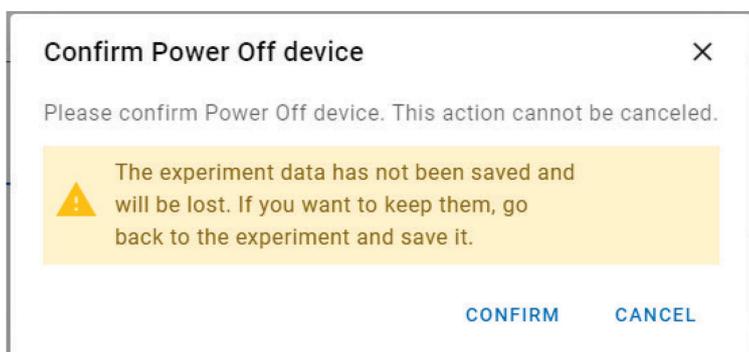


### 3.3.1 Status bar

The Status bar at the top of the screen displays information about the active user session.



- *Date & time* – Shows current date and time. Clicking on the date/time field allows a user with administrative privileges to set the correct date and time.
- *Username* – Shows user ID of the logged in user. Clicking on user field allows the user to change their password.
- *Power off button* – Shuts down the touch interface. A warning appears if data in an experiment have not been saved.



### 3.3.2 Main toolbar

The Main toolbar is comprised of environment icons and the logout option.



#### Environment icons

Switch between the environments of the Q-Rex Touch Software by tapping the corresponding menu items in the Main toolbar. The icon of the active environment is highlighted with a blue box.

Environment	Description
 <b>MY Q-REX</b>	Access <b>My Q-Rex</b> to create or open experiments and templates.
 <b>EXPERIMENTS</b>	Enter the <b>Experiments</b> environment to set up and analyze experiments.
 <b>STORAGE</b>	Manage your experiment and template files in the <b>Storage</b> environment.
 <b>SERVICE</b>	Find the System Audit Trail, Support Package, and Extras functions in the <b>Service</b> environment.
 <b>CONFIGURATION</b>	Manage settings, and user accounts in the <b>Configuration</b> environment.

See “Working area” section for more information on the functions associated with the environments.

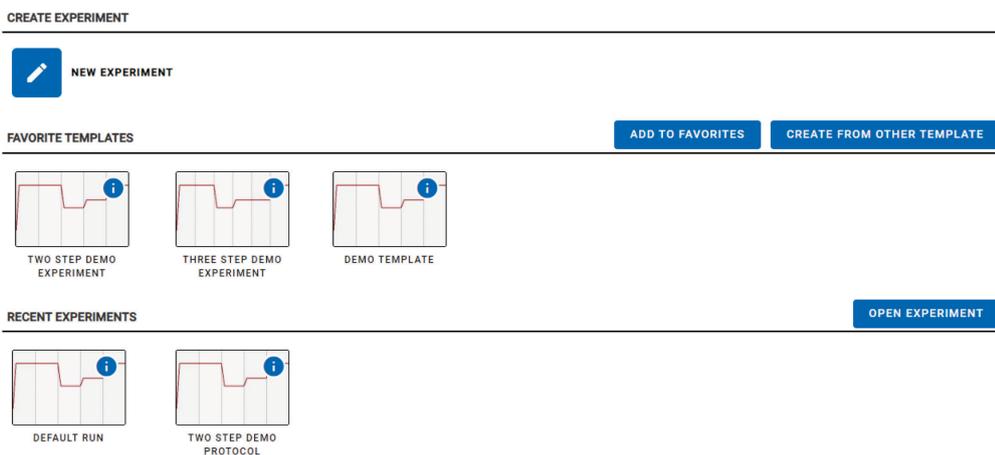
### 3.3.3 Working area

The Working area displays the functions belonging to the selected environment.

- My Q-Rex
- Experiments
- Storage
- Service
- Configuration

#### My Q-Rex

The **My Q-Rex** environment bundles all tasks for creating and opening both experiments and templates.



#### Create experiment

Use "Create Experiment" on the upper part of the My Q-Rex environment to create a new experiment.

#### Favorite templates

In "Favorite Templates", the middle section of the My Q-Rex environment, you can create experiments based on previously saved templates. All data fields in the new experiment are populated with existing data from the template. For details, see "Create an experiment using a template" section.

All favorite templates are listed below the headline. For information on how to add templates to the list, see "Manage favorite templates" section.

## Recent experiments

You can access recently used experiments under “Recent Experiments” on the lower part of the My Q-Rex environment. Open and edit a recent experiment or use it to transfer its data to a new experiment. For details, refer to “View recent experiments” or “Create an experiment based on an existing experiment” section, respectively.

All recently saved experiments are listed below the headline.

## Experiments

The **Experiments** environment is where experiments are set up and executed (run). To work on an experiment, create or open it in the **My Q-Rex** environment.

Changes made to an experiment are made permanent upon saving the experiment. To start a run, the corresponding experiment must be saved.

The screen of the experiment environment has 2 main sections: the **Step marker** and the **Main panel**.

### Step marker

The **Step marker** guides you through an experiment and allows you to navigate between different aspects of an experiment. Each experiment step is associated with content in the main panel. To switch to another step, tap the corresponding step in the **Step marker**.



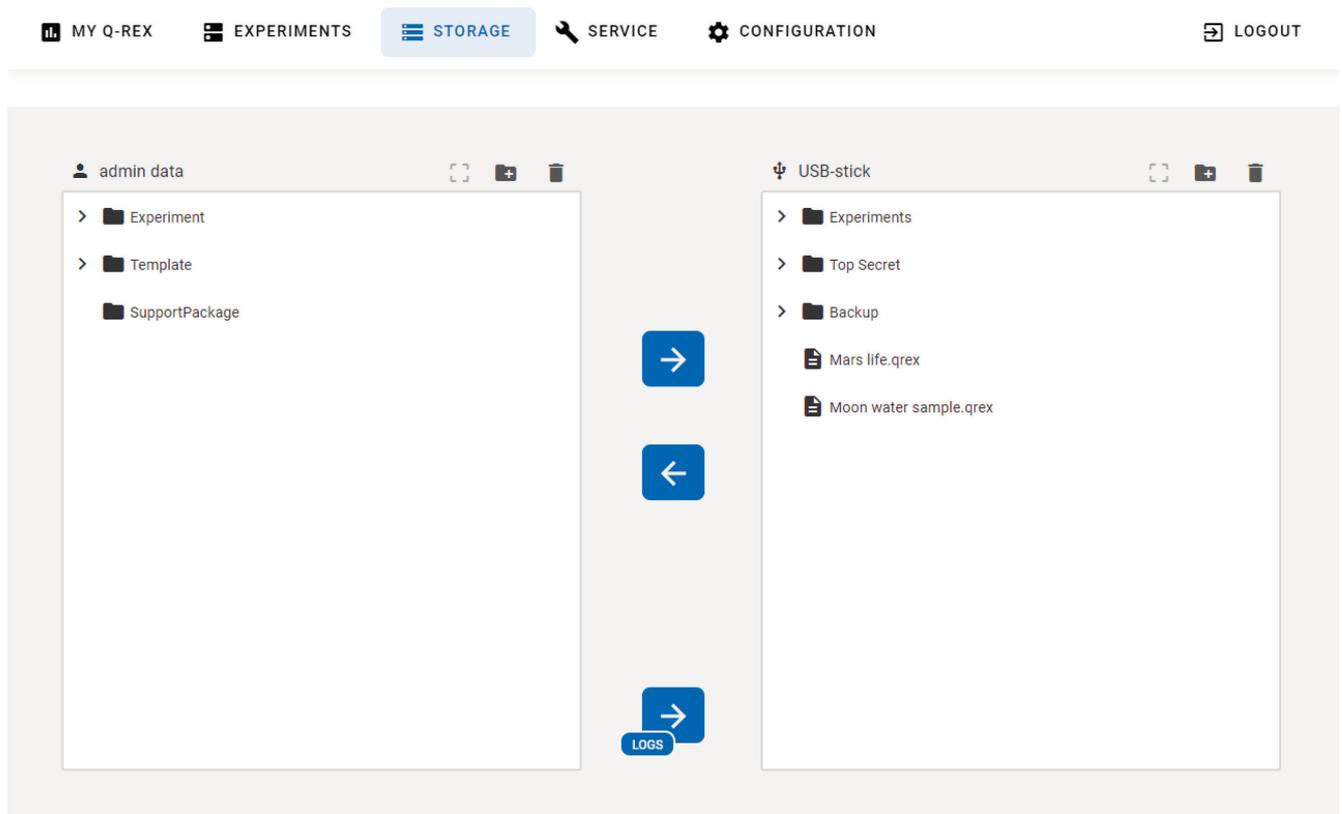
**Note:** We recommend working through experiment steps in sequence; however, you can navigate between any 2 steps at any time.

### Main panel

All experiment-specific information is displayed in the **Main panel**, and all changes to the experiment are done in this panel. The content depends on the step selected in the **Step Marker**.

## Storage

The **Storage** environment allows you to manage your files on the instrument's tablet. Experiment and template files can be moved from the instrument to a connected USB stick or vice versa. Additionally, the **Storage** environment allows you to delete files and set up sub-folders within the pre-set-up **Experiment** and **Template** folder on the instrument's tablet and within the connected USB stick. For more information on file import and export, refer to "Manage transfer of files" section.



## Service

The **Service** environment bundles tasks for troubleshooting and facilitates communicating with QIAGEN Technical Services when you need assistance.

This environment is organized into 3 functions, accessed by clicking the respective tab under the Main toolbar:

Tab	Description
System Audit Trail	Allows you to view the system audit trail.
Support Package	Creates a support package to assist communicating with QIAGEN.
Extras	Allows you set the instrument's transport lock and to initialize the device.

For further assistance during troubleshooting, review the “Troubleshooting” section or contact Technical Services.

**Note:** The **Service** environment will only be visible when logged in as Administrator or Service user.

## Configuration

The **Configuration** environment bundles all tasks to manage users within the Q-Rex Software.

This environment is organized into 2 configuration functions, accessed by tapping the respective tab under the Main toolbar:

Tab	Description
Settings	Define general user management settings as password renewal interval and password strength.
User management	Manage user accounts which include creating or modifying users and their roles, as well as activating and deactivating user accounts. See “User management” for more information.

**Note:** The service environment will only be visible when logged in as Administrator or Service user.

## 4 Manage Experiments and Templates

The **My Q-Rex** environment allows you to:

- Manage favorite templates
- View recent experiments

Additionally, templates and experiments can be managed in the **Storage** environment:

- Manage transfer of files

### 4.1 Manage favorite templates

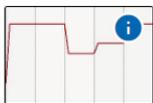
Each user can maintain a customized list of templates in the **Favorite templates** field.

The field is initially empty. Templates can be added or removed from the list, and new experiments can be created based on these templates (see “Create an experiment using a template” section). Additionally, you can create experiments based on templates that are not contained in the list of favorite templates.

#### FAVORITE TEMPLATES

ADD TO FAVORITES

CREATE FROM OTHER TEMPLATE



DEFAULT TEMPLATE

You can place up to 11 files in the list of favorite templates. Once you have reached this number, remove a template from the list to add another.

Template names that are too long to display within the available space are truncated. The full template name, as well as a preview of the thermal profile, can be viewed by tapping once on the information icon (i) on the top-right corner of the template image.

Default template - Details

Steps	Temperature	Time	Cycles	Acquisition
Hold	95 °C	300 s		
Cycling			40 x	
	95 °C	20 s		■ ■
	60 °C	20 s		
Melt	72 - 95 °C			■ ■

CREATE EXPERIMENT REMOVE FROM FAVORITES

**Note:** Only the files of the respective user that is logged in can be accessed.

### 4.1.1 Creating an experiment from a template

An experiment is created once a template file is opened. It will contain all settings stored in the template file. There are different ways to open a template file within the Q-Rex Touch Software:

- By tapping on the template file, a new experiment will open.
- By tapping on the information icon (i) in the upper-right corner of the template image, a pop-up window will open. Within this pop-up window, the thermal profile information can be viewed, and by pressing **Create Experiment**, a new experiment from the selected template file will be opened.
- By tapping the **Create from other template** button. Select the respective template file and press **OK**.

### 4.1.2 Adding a template to the list of favorite templates

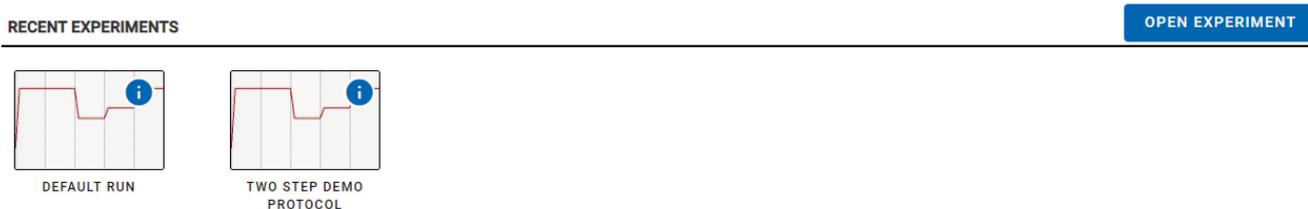
By tapping the **Add to favorites** button, you can add a template to your favorite templates list. The templates have to be located on the storage of the instrument tablet. See "Manage transfer of files" for information on how to transfer template files from a USB stick to the instrument storage.

### 4.1.3 Removing a template from the list of favorite templates

To remove a template from the favorite template list, tap on the information icon (i) of the template and press the **Remove from favorites** button. Removing the template from the list does not delete or modify the template file.

## 4.2 View recent experiments

An experiment that is recently run or saved is added to the **Recent Experiments** list.



A maximum of 11 experiments appear in this list. Once this number is reached, the oldest entry of the list is automatically removed when a new entry is added.

Experiment names that are too long to display within the available space are truncated. The full experiment name, as well as a preview of the thermal profile, can be viewed by tapping on information icon (i) on the top right corner of the template image.

**Note:** Only the files of the respective user that is logged in can be accessed.

### 4.2.1 Open an experiment file

There are different ways to open an experiment file within the Q-Rex Touch Software:

1. Tap on the experiment file within the Recent Experiments list.
2. Tap on the information icon (  ) of the experiment file and select open.
3. Press **Open experiment**, and select the experiment file to be opened.

### 4.2.2 Creating an experiment from a file in the recent experiment list

To open an experiment from the recent experiments list:

1. Tap on the information icon (  ) in the upper right corner of the template image. A pop-up window with a preview of the thermal profile will appear.
2. Within this pop-up window, press **Use for new experiment** to set up a new experiment, based on the selected one.  
The new experiment contains the information stored in the selected experiment.
3. The new experiment can be adapted or started by going to the **Run** tab and pressing the **Start run** button.

### 4.2.3 Removing a template from the recent experiments list

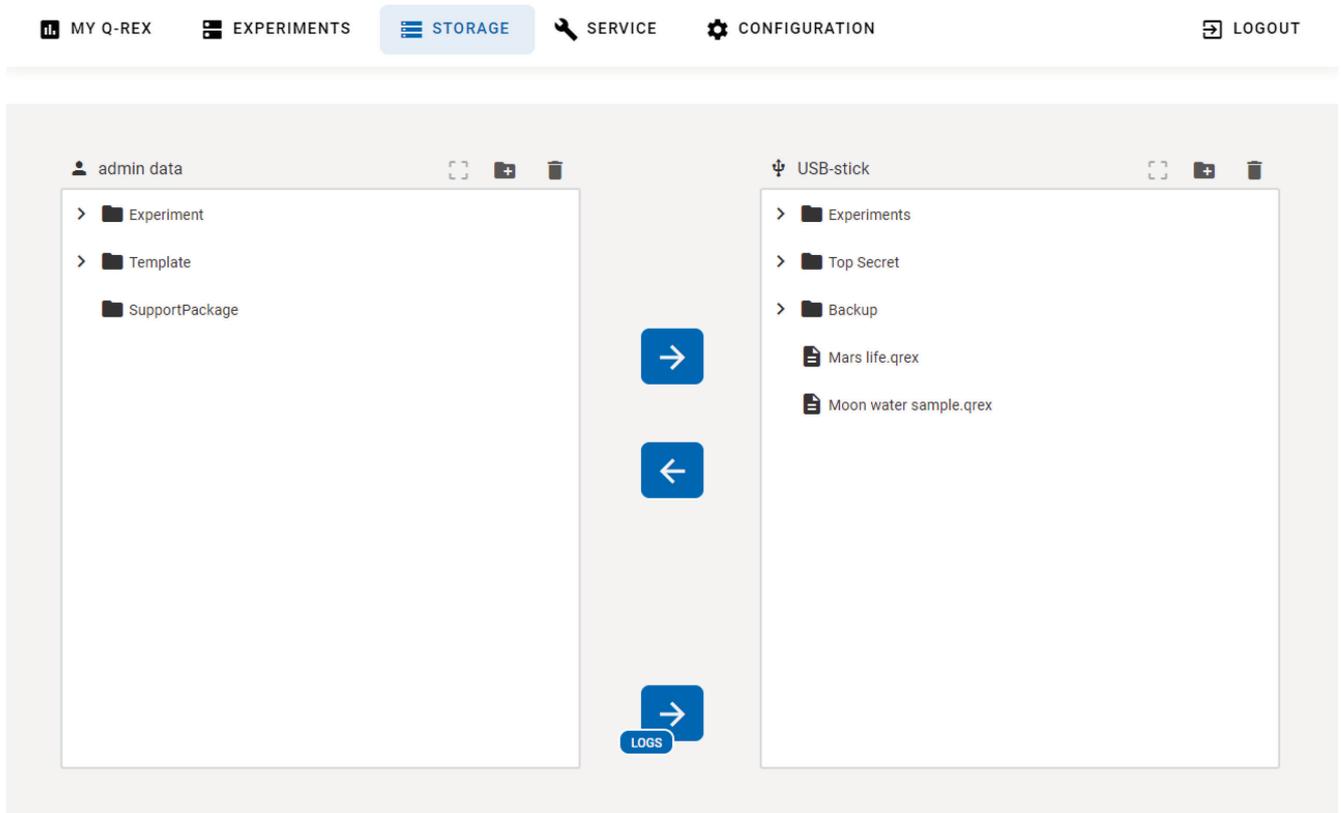
To remove an experiment from the recent experiments list, tap on the information icon (  ) of the file and press **Remove from recent**. Removing the experiment from the list does not delete or modify the experiment file.

### 4.2.4 Save experiment as a template

To save an experiment as a template file, tap on the information icon (  ) of the file and within the pop-up window that appears, select **Save as template**.

## 4.3 Manage transfer of files

Experiment and template files, as well as support packages, can be transferred to and from a connected USB stick within the **Storage** environment of the software.



When a USB stick is connected, experiment and template files can be transferred from the instrument onto the USB stick or from the USB stick to the instrument. Select the file to be transferred and press the respective arrow button.

File selection can be suspended by pressing .

**Note:** Only the files of the respective user that is logged in can be accessed.

### 4.3.1 Create new folders

Within the default folders **Experiment** and **Template**, new folders can be created. Go to the respective folder, press the folder icon and enter the name of the new folder. Confirm by pressing **OK**.

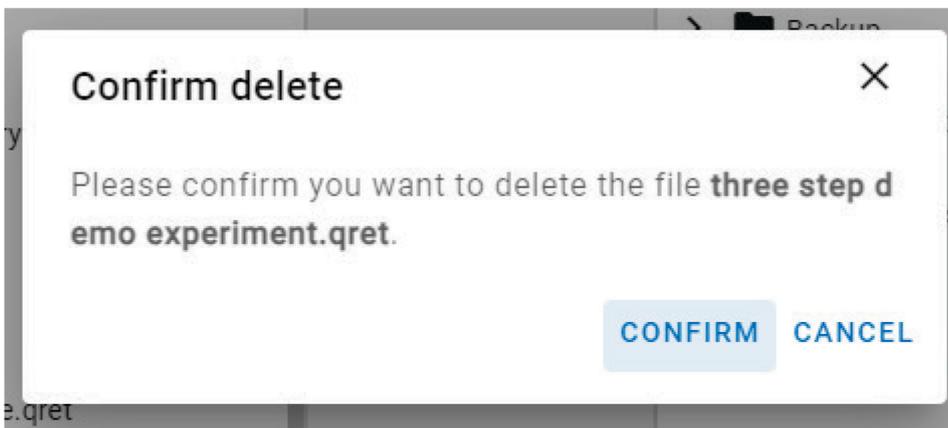


**Note:** It is not possible to create folders within the SupportPackage folder or outside of the default directories.

### 4.3.2 Deleting files from the instrument's storage

Files and folders located within the folders of the logged in user can be deleted by pressing the **Delete** icon (🗑️).

**Note:** Once a file has been deleted, there no option to restore that file.



### 4.3.3 Support package

For more information on the support package, see "Support package".

## 5 Set Up an Experiment

You can set up an experiment with the Q-Rex Touch Software by defining a run profile as described in this section, or you can use a template or experiment file that has been set up using the Q-Rex PC Software. For more information on the Q-Rex PC Software, refer to the *Q-Rex User Manual*.

The standard procedure to set up a new experiment using the Q-Rex Touch Software involves the following steps:

- Create an experiment
- Define general information
- Define the run profile
- Define a sample layout

### 5.1 Create an experiment

A new experiment can be created in 3 different ways:

- Create from a blank experiment
- Create an experiment using a template
- Create an experiment based on an existing experiment

#### 5.1.1 Create from a blank experiment

1. Within the **My Q-Rex** environment press the **New experiment** button.

**CREATE EXPERIMENT**

---



**NEW EXPERIMENT**

2. The software switches to the **Experiments** environment upon opening a new experiment. In the step marker, the **General** tab is preselected.
3. Define basic information about the experiment under each of the steps in the step marker.

**Note:** The **Run** button remains inactive until all required information is entered in the **Run Profile** step.

Step in Step Marker	Available definitions
General	Enter basic information about the experiment in the <b>Comment</b> field. <b>Note:</b> The other fields are read-only and are prefilled if information is available.
Run Profile	Define the run profile: <ul style="list-style-type: none"> <li>• Cycling conditions</li> <li>• Acquisitions</li> </ul>
Sample layout	Define samples: <ul style="list-style-type: none"> <li>• Sample type</li> <li>• Sample name</li> </ul>
Run	To start the run
Audit trail	No input possible, shows the experiment audit trail.

### 5.1.2 Create an experiment using a template

An experiment is created once a template file is opened. It will contain all settings stored in the template file. There are different ways to open a template file within the Q-Rex Touch Software:

- Tapping on the template file will open a new experiment.
- By tapping on the information icon (i) in the upper-right corner of the template image, a pop-up window will open. Within this pop-up window, the thermal profile information can be viewed, and by pressing **Create experiment**, a new experiment from the selected template file will be opened.
- Press **Create from other template**. Select the respective template file, and press **OK**.

### 5.1.3 Create an experiment based on an existing experiment

To create an experiment based on a previously executed experiment, open the experiment information window by tapping on the information icon (i) and select the option **Use for new experiment**.

The new experiment is created with the following settings from the chosen experiment:

- General experiment information
- Thermal profile
- Acquisitions
- Sample information (only sample type and name displayed in Q-Rex Touch Software; all other sample information can only be viewed and changed in the PC version of Q-Rex)
- Analysis settings (not visible in Q-Rex Touch Software; only displayed in PC version of Q-Rex)

**Note:** If available, extended sample information and analysis settings are stored in an experiment file but can only be accessed using the Q-Rex PC Software. For more information, refer to the *Q-Rex User Manual*.

## 5.2 Define general information

The screen of the **General** step is arranged into 3 areas, where you can enter information about the experiment that should appear in the report.

The screenshot shows the 'Experiment information' form with the following fields and annotations:

- Area 1:** A large text area labeled 'Comment' with a character count '0 / 2048' and an edit icon.
- Area 2:** A dropdown menu labeled 'Experiment Operator' with the value 'Administrator Administrator' and an edit icon.
- Area 3:** Three read-only fields: 'Creation Date' (2/15/2023 1:13:21 PM), 'Assay setup file or worklist', and 'Template'.

At the bottom, there are tabs for 'GENERAL', 'RUN PROFILE', 'SAMPLE LAYOUT', 'RUN', and 'AUDIT TRAIL', along with a 'SAVE EXPERIMENT' button.

**Note:** All data entered here are informational only. The data do not influence how an experiment is created, executed or analyzed.

- |  |  |
|--|--|
| Comment (1)  | Enter relevant information about the experiment in the <b>Comment</b> field.   |
| Experiment operator (2)  | By default, this field contains the username of the operator currently logged into the Q-Rex software. Edit the operator if necessary. |
| Creation date, Assay setup file or Worklist Template, Template (3) | These are read-only fields that are prefilled if information is available.   |
- Note:** If the experiment was created from a setup file or worklist, the name of the file or worklist is displayed. If the experiment was created from a template, the name of the file is displayed.

## 5.3 Define the run profile

The screen for the **Run Profile** step is divided into 2 areas: Basic profile settings (1) and Thermal profile (2).

MY Q-REX EXPERIMENTS STORAGE SERVICE CONFIGURATION LOGOUT

Lid temperature °C: 100  Preheat lid Measurement repetitions: 9

1

Thermal Profile

+ ADD STEP

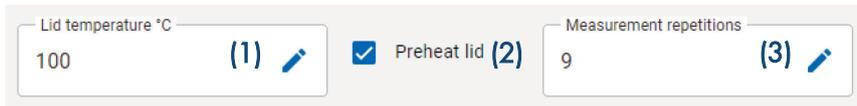
Stage	Temperature (°C)	Time (sec)	Rate (°C/sec)
Hold	95	300	8
Cycling	95	20	8
Cycling	60	20	6
Melt	72	90	8
Melt	95	5	1

Estimated run time 1 h 6 min

GENERAL RUN PROFILE SAMPLE LAYOUT RUN AUDIT TRAIL SAVE EXPERIMENT

### 5.3.1 Define basic profile settings

The basic profile settings that can be adjusted are the **Lid temperature**, the **Preheat lid option**, and the **Measurement repetitions**.



The screenshot shows a settings interface with three main elements: a text input field for 'Lid temperature °C' containing the value '100', a checked checkbox for 'Preheat lid', and a text input field for 'Measurement repetitions' containing the value '9'. Each of these three elements is accompanied by a blue pencil icon and a number in parentheses: (1) for the temperature field, (2) for the preheat lid checkbox, and (3) for the measurement repetitions field.

Lid temperature (1)

The default value is set to 100°C. It can be adjusted by tapping into the field. The temperature can be adjusted from 30°C to 110°C.

Preheat lid (2)

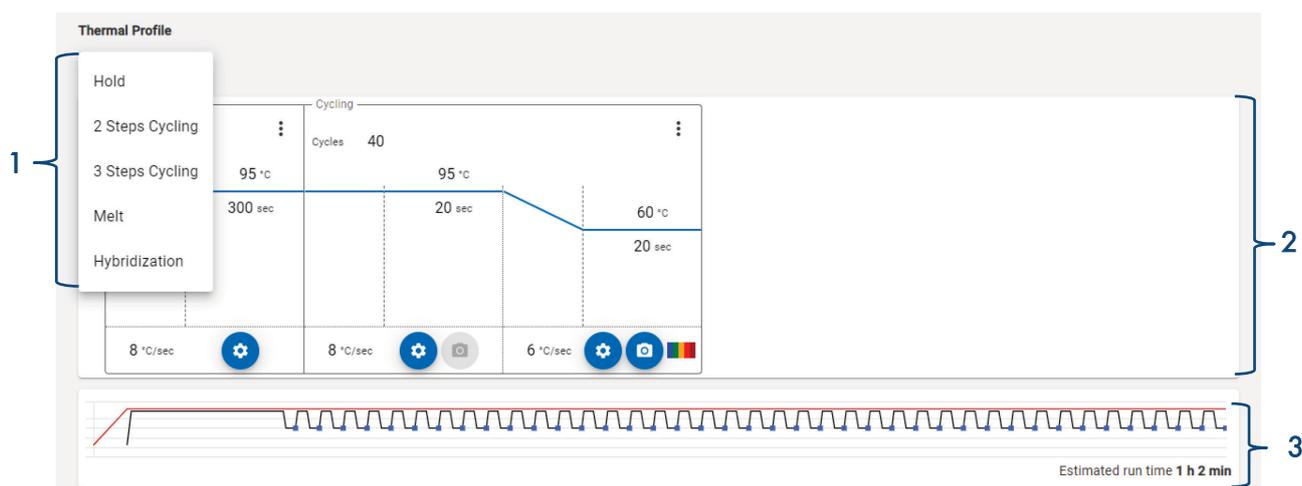
The **Preheat lid** option is selected by default; it enables the heated lid to be preheated to the specified temperature before the PCR program starts. While the lid is preheated, the block is kept constant at 25°C.

Measurement repetitions (3)

The number of repetitions of the fluorescence measurement can be adjusted. The default value is set to 9, possible values: 1 to 16.

### 5.3.2 Define the thermal profile

In the **Thermal Profile** editor, you can define a thermal profile by adding profile phases from the **Add step** drop-down menu (1) onto the profile area (2). The profile area is linked to the **run preview** (3), which displays the profile over the complete run and the estimated run time.



One or more profile phases can be selected from the toolbox to the right of the profile area to design a cycling profile:

Hold	Holds at a specific temperature (see section “Define a hold phase”)
2-Step Cycling	Define 2 temperatures, hold times, number of cycles, and acquisitions (see section “Define a cycling phase”)
3-Step Cycling	Define 3 temperatures, hold times, number of cycles, and acquisitions (see section “Define a cycling phase”)
Melt	Define an increasing temperature range and an acquisition for melt experiments
Hybridization	Define a decreasing temperature range and an acquisition for melt experiments

To add a phase to the profile, select the phase in the dropdown menu and it will appear in the profile area. You can move a phase back or forward, or remove it by tapping on the three dots in the upper-right corner of the phase. A separate window with the respective options will open. Additionally, for the 2-step cycling and 3-step cycling phase steps can be added or removed.

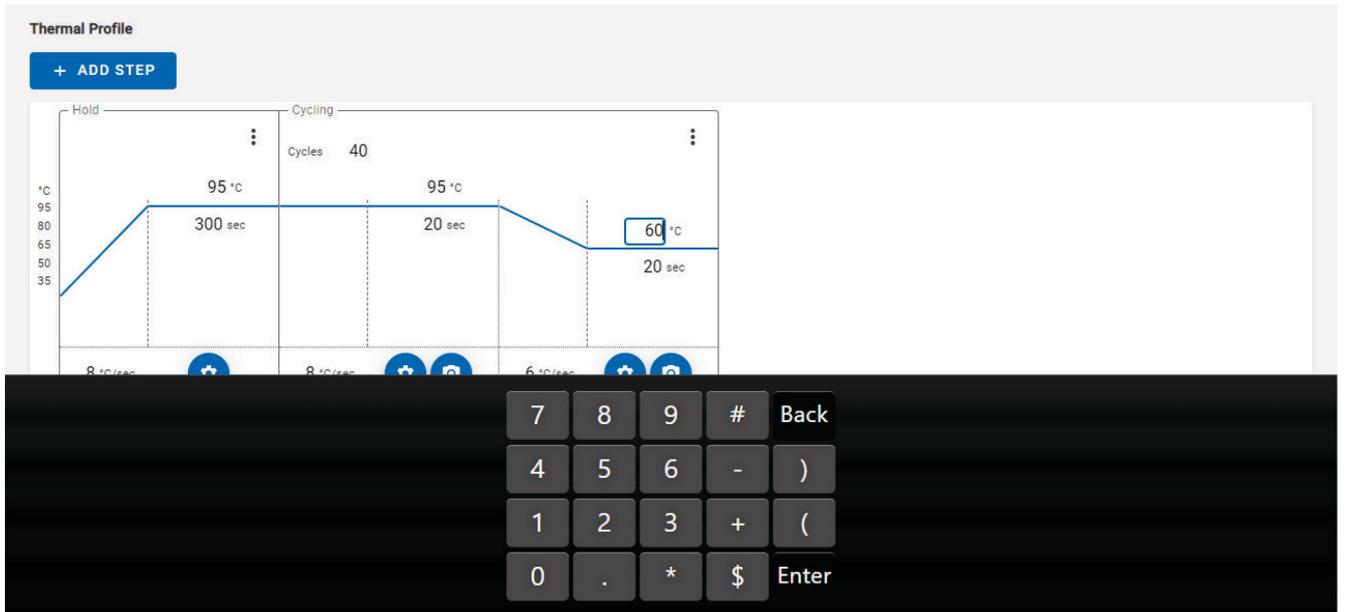


Newly inserted profile phases include default values that should be adjusted to meet experimental setup requirements.

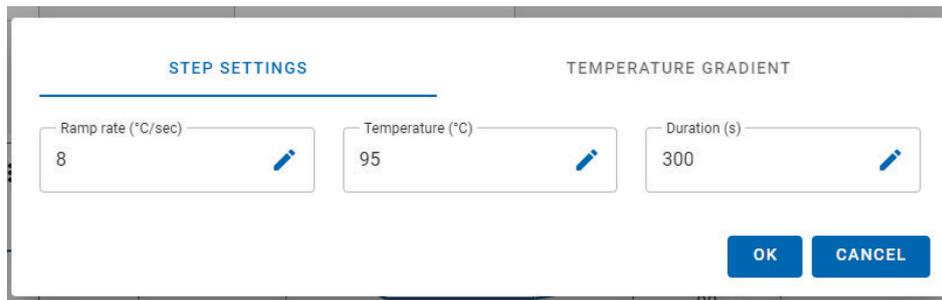
To change a temperature or the hold time, do one of the following:

Tap onto the temperature or hold time you wish to change. A virtual keyboard will appear, where you can edit the value as needed.

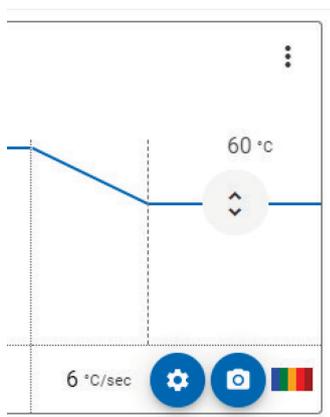
**Note:** The time entry must be entered in seconds (e.g., 5 min = 300 s).



Alternatively, the temperature or hold time can be changed by tapping onto the gear icon (⚙️) of the respective step to open the **Step settings**. Within the step options window, a virtual keyboard will appear upon tapping into the respective field.



The temperature can also be adjusted by moving the temperature bar. Tap onto and hold the bar, and move it up or down to adjust the temperature. As the bar is adjusted, the changing temperature is displayed and the adjusted profile is reflected in the run preview.



The allowed temperature range is 4–99°C. If the inserted temperature is outside the allowed range, it will automatically be adjusted to the closest temperature within the range.

### Define a hold phase

A hold phase instructs the QIAquant to remain at a specified temperature for a defined duration.

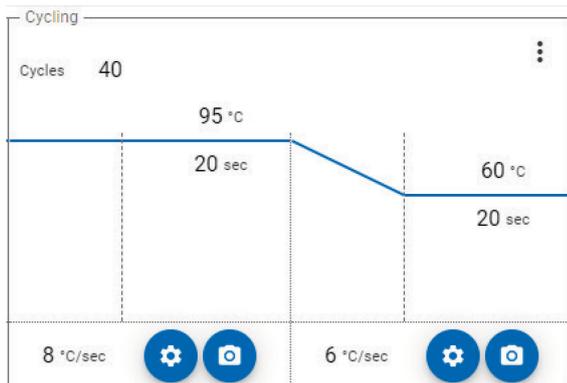
**Note:** Data acquisition is not possible during a hold phase.

1. Select a Hold phase in the **Add step** drop-down menu to add it to the thermal profile.
2. Enter the temperature for the **Hold** (see “Define the thermal profile”).
3. Set the time interval for which the temperature should remain constant (see “Define the thermal profile”).

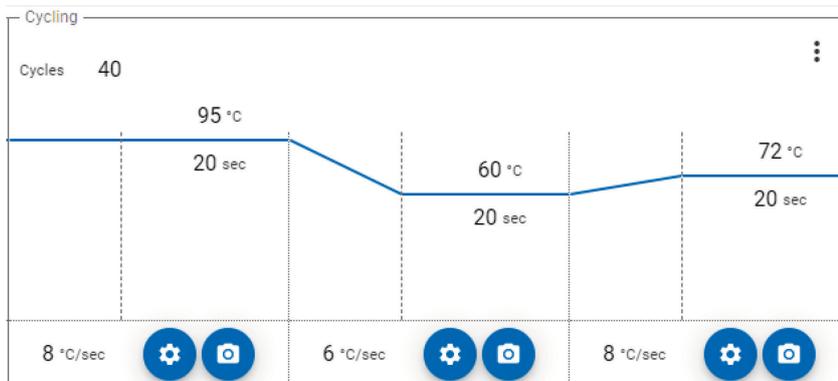
## Define a cycling phase

A PCR cycles multiple times through user-defined temperature changes that enable denaturation and enzymatic amplification of DNA. Each cycle is defined by cycling phases that define the temperature of the reaction and the length of time spent at that temperature.

A 2-step Cycling phase consists of 2 cycling steps.



A 3-step Cycling phase consists of 3 cycling steps.



Each step includes default values that should be adjusted to meet specific experimental setup requirements.

To set up a cycling phase:

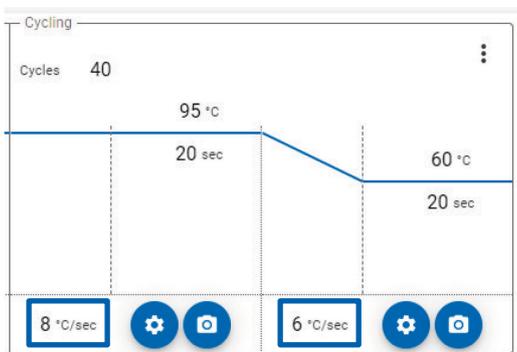
1. Select **2-step Cycling** or **3-step Cycling** phase in the **Add step** drop-down menu to add it to the thermal profile.
2. In the cycles entry field, enter the number of times that the cycling phase should be performed.
3. Enter the temperature for the cycling steps (see "Define the thermal profile").
4. Set the time interval for which the temperature should remain constant at each step during cycling (see "Define the thermal profile").
5. Add an acquisition to 1 of the cycling step (see "Add an acquisition").

6. **Optional:** The cycling phase can be adjusted further in the following ways:

- Modify the cycling phase by adding or removing a cycling step (see "Define the thermal profile")
- Adjust the ramp rates between the steps (see "Adjust ramp rates")
- Adjust the temperature for each cycle (see "Vary hold temperature per cycle")
- Adjust the hold time for each cycle (see "Vary hold temperature per cycle")
- Add a temperature gradient to a cycling step (see "Add a temperature gradient")

### Adjust ramp rates

The ramp rate defines the speed at which the target temperature is reached. By default, the highest heating or cooling rate is set (heating: 8°C/s; cooling: 6°C/s). The ramp rates are displayed in the bottom part of the thermal profile.



For special applications or the transfer of protocols from other devices it may be required to adjust the heating and cooling rates.

To adjust the ramp rate of a step, tap onto the gear button (⚙️) of the respective step. A new window will pop up displaying the different **Step settings**, including an input field for the ramp rate. Tap into the **Ramp rate** field to edit the value as needed.

The figure shows a dialog box titled "STEP SETTINGS" with a sub-header "TEMPERATURE GRADIENT". The dialog is for "Step 2". It contains five input fields, each with a blue pencil icon to its right: "Ramp rate (°C/sec)" with the value "6", "Temperature (°C)" with the value "60", "Duration (s)" with the value "20", "Delta temperature (°C)", and "Delta time (s)". At the bottom right, there are two buttons: "OK" and "CANCEL".

## Vary hold temperature per cycle

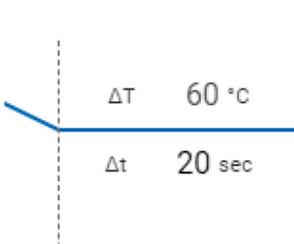
The temperature of a step can be raised or lowered for each cycle using the **Delta temperature** option in the step settings of a cycling step.

To program a temperature increment or decrement:

1. Select the gear button (⚙️) at the bottom of the cycling step to be modified. A pop-up window will open with **Step settings**.

The screenshot shows a 'STEP SETTINGS' dialog box for 'Step 2'. It contains five input fields: Ramp rate (°C/sec) set to 6, Temperature (°C) set to 60, Duration (s) set to 20, Delta temperature (°C) set to 1, and Delta time (s) set to 1. Each field has a blue pencil icon for editing. At the bottom right are 'OK' and 'CANCEL' buttons.

2. Within the **Step settings**, a temperature increment or decrement can be set under **Delta temperature**. Values between  $-20^{\circ}\text{C}$  and  $20^{\circ}\text{C}$  can be set.
3. Save the settings by selecting **OK** or discard changes by selecting **Cancel**.
4. Temperature increment or decrement settings are indicated by a delta symbol next to the temperature of the respective step.



To remove a temperature increment or decrement from a cycle phase:

1. Select the gear button (⚙️) at the bottom of the cycling step to be modified. A pop up window will open with step settings.
2. Clear the value in the **Delta temperature** field.
3. Confirm with **OK**.

## Vary hold time per cycle

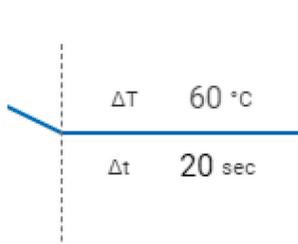
The hold time of a step can be increased or decreased for each cycle using the **Delta time** option in the step settings of a cycling step.

To program a time increase or decrease:

1. Select the gear button (⚙️) at the bottom of the cycling step to be modified. A pop-up window will open with **Step settings**.

The screenshot shows a 'STEP SETTINGS' dialog box for 'Step 2'. It contains five input fields: 'Ramp rate (°C/sec)' with value 6, 'Temperature (°C)' with value 60, 'Duration (s)' with value 20, 'Delta temperature (°C)' with value 1, and 'Delta time (s)' with value 1. Each field has a blue pencil icon for editing. At the bottom right are 'OK' and 'CANCEL' buttons.

2. Within the **Step settings**, a time increase or decrease can be set under **Delta time**. Values between 0 and 240 s can be set.
3. Save the settings by selecting **OK** or discard changes by selecting **Cancel**.
4. Time increase or decrease settings are indicated by a delta symbol next to the time of the respective step.



To remove a time increase or decrease from a cycle phase:

1. Select the gear button (⚙️) at the bottom of the cycling step to be modified. A pop up window will open with **step settings**.
2. Clear the value in the **Delta time** field.
3. Confirm with **OK**.

## Add a temperature gradient

For the QIAquant, a temperature gradient can be programmed across the thermoblock. The gradient is applied column-wise from left to right. To program a temperature gradient:

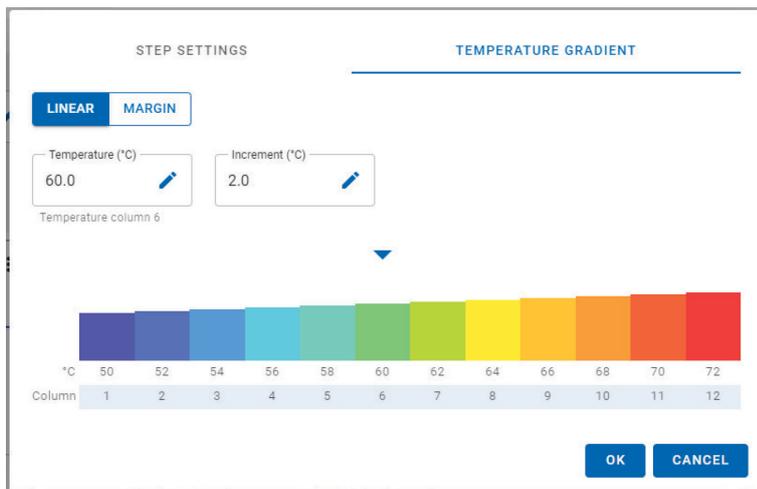
1. Tap on the gear button (⚙️) of the step you would like to add the temperature gradient to. A new window will pop up.
2. Within the pop up window select option **Temperature Gradient**.



3. Select either **Linear** or **Margin** option for gradient setup.

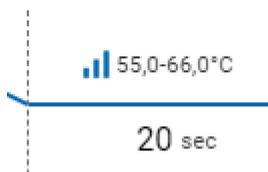
- **Linear** calculates gradient steps based on definition of the temperature of the center column and temperature increments.
- **Margin** calculates gradient steps based on definition of temperatures of the first and last column.

4. Define the temperature settings according to the gradient option. Changes will directly be visible in the gradient graph.



5. Save the settings by pressing **OK** or discard changes by pressing **Cancel**.

6. After saving, the temperature range and gradient icon will appear on the temperature profile indicating that a temperature gradient is set.



To remove a temperature gradient from a cycle phase:

1. Select the gear button (⚙️) and go to **Temperature Gradient**.
2. Define the temperature increment as 0.0°C in the **Linear** view or within the **Margin** view; set the temperature of the first and last column to the same value. You can also clear the respective fields to remove the gradient settings
3. Press **OK** to save changes.

## Define a melt phase

A melt phase is used as a quality check after a PCR with intercalating dyes or to determine the melting point of a sample. The temperature is steadily increased so that amplified products dissociate at a certain temperature, depending on their length and sequence composition.

A melt phase is a ramp between 2 temperatures, from low to high. The recommended temperature range is 35–99°C.

To set up a melt phase:

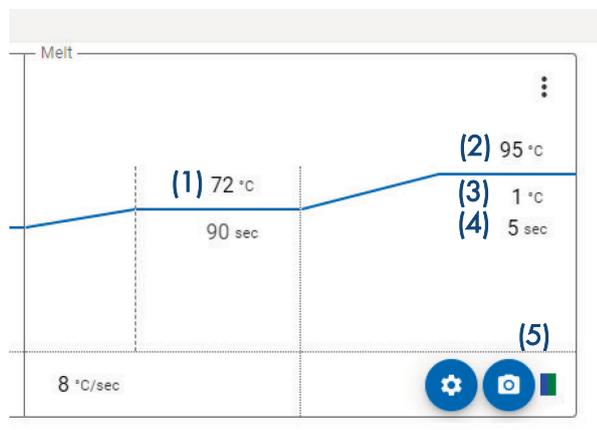
1. Define a cycling phase with an acquisition on the same channel as planned for the melt phase.

**Note:** A cycling phase with a defined acquisition must precede a melt phase. Otherwise, no acquisition channel can be chosen.

2. Add a **Melt step** to the thermal profile.

**Note:** A newly inserted melt phase includes default values that should be adjusted to meet experimental setup requirements.

3. Specify the start temperature (1) and the end temperature (2) for the melt phase.
4. Define the temperature increments (3) and the length of time for which each increment should be held (4).
5. Add one or more acquisitions for the melt phase (5). The acquisition channel must match an acquisition defined in the preceding cycling phase.



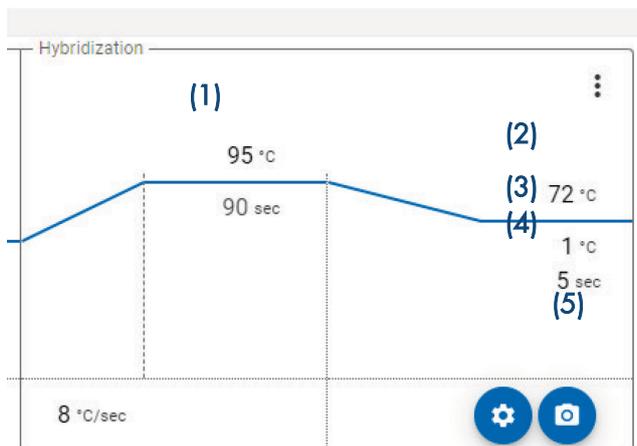
## Define a hybridization phase

A hybridization phase is used to hybridize nucleic acids. The reaction temperature is steadily decreased so that single-stranded nucleic acids associate to form double-stranded molecules at a certain temperature, depending on their length and sequence composition. The hybridization curve shows an increase in fluorescence from intercalating dyes, which peaks at the association time point.

A Hybridization is a ramp between 2 temperatures, from high to a low.

To set up a hybridization phase:

1. Define a cycling phase with an acquisition on the same channel as planned for the hybridization phase.  
**Note:** A cycling phase with a defined acquisition must precede a hybridization phase. Otherwise, no acquisition channel can be chosen.
2. Add a hybridization step to the thermal profile.  
**Note:** A newly inserted hybridization phase includes default values that should be adjusted to meet experimental setup requirements.
3. Specify the start temperature (1) and the end temperature (2) for the hybridization phase.
4. Define the temperature declines (3) and the length of time for which each decline should be held (4).
5. Add one or more acquisitions for the hybridization phase (5). The acquisition channel must match an acquisition defined in the preceding cycling phase.



### Add an acquisition

Data can be acquired at almost every step of a thermal profile. The only exception is a hold phase, which cannot be combined with a data acquisition.

To add acquisitions in the Thermal Profile editor:

1. Tap on the camera icon (📷) at the bottom of a profile step. All available channels, including examples of fluorophores that can be detected in each channel, are displayed.
2. Select the desired channel(s) for the acquisition by checking the box located before the channel name.

		Channel name	Example of fluorophores	Gain method	Passive reference
<input checked="" type="checkbox"/>		Blue	FAM™, SYBR® Green, EvaGreen®	FIXED	<input type="checkbox"/>
<input type="checkbox"/>		Green	JOE™, HEX™, VIC®, MAX™, Yakima Yellow®	n/a	<input type="checkbox"/>
<input type="checkbox"/>		Orange	ROX™, Texas Red™	n/a	<input type="checkbox"/>
<input type="checkbox"/>		Red	Cy®5, Quasar® 670, ATTO™ 647N	n/a	<input type="checkbox"/>
<input type="checkbox"/>		NIR1	Cy®5.5, Quasar® 705, ATTO™ 680	n/a	<input type="checkbox"/>

OK CANCEL

For each selected channel a different gain value can be set. Under **Gain Method**, select the respective channel from the drop-down menu and enter the desired value. Values between 0.1 and 10 can be entered. The default value is 5.

If a passive reference should be included, select the checkbox in the Passive reference column for the desired channel.

**Note:** Only one channel can be selected as passive reference.

3. Click **OK** to confirm selection and settings of channels.
4. Channel selection will displayed next to the camera icon.



**Note:** An acquisition can only be set at one cycling step for an experiment (melt and hybridization steps are independent of cycling steps in terms of acquisitions).

## 5.4 Define a sample layout

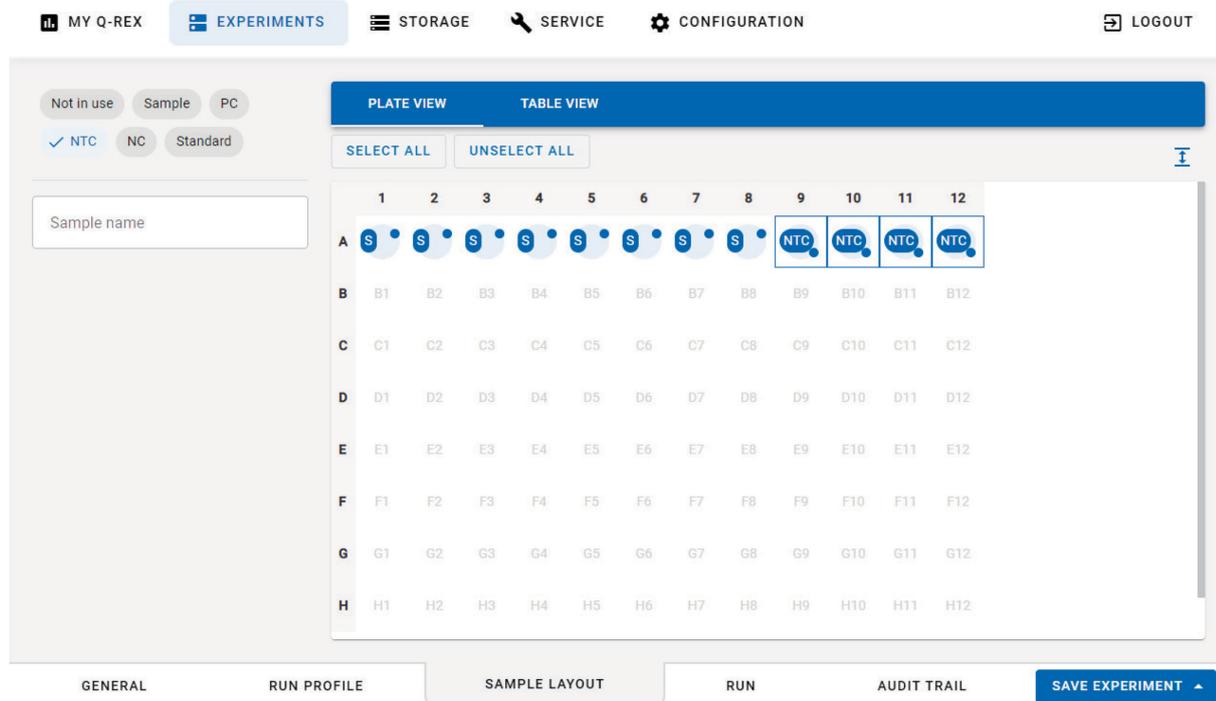
Basic information about the sample layout can be defined in the Q-Rex Touch Software. The information that can be entered are as follows:

- Sample name
- Sample type

For full functionalities of the sample layout definition, the Q-Rex PC software can be used.

**Note:** The sample layout has no influence on data acquisition. A sample layout does not need to be defined to run an experiment and, if needed, can be defined or changed afterwards.

To enter sample information in the **Plate view**:

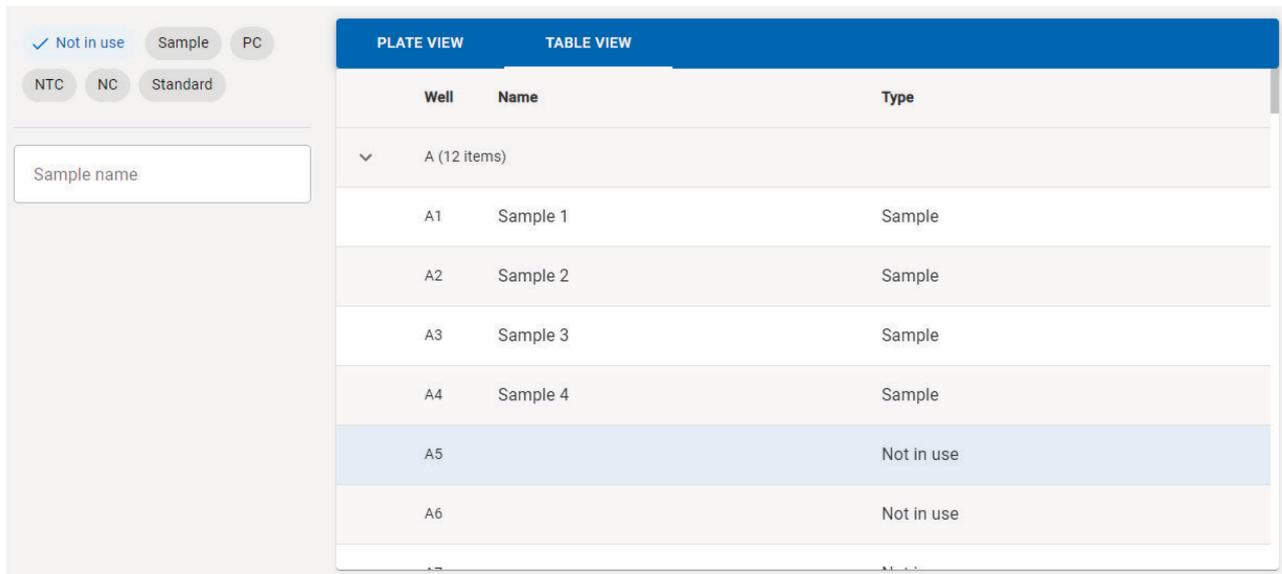


1. Go to the **Sample layout** tab.
2. Select the well positions on the **Plate view** that should be modified. There are different options for selection:
  - by tapping on the wells
  - selecting an entire row or column by tapping on the column/row naming at the border
  - all wells can be selected with the **Select all** button

Upon selecting one or more wells, options to define the sample type and a field for the sample name appear on the left-hand side.

Wells can be deselected by tapping on them again or abolish entire selection by pressing the **Deselect all** button.

3. Select the sample type, the available options are: Note in use, Sample, PC (Positive Control), NTC (No Template Control), NC (Negative Control), and Standard. By default all wells are set to not in use.
4. Upon selecting a sample type different than Not in use, wells are marked in the plate view with a blue circle and the respective sample type.
5. **Note:** The **Plate view** can be expanded or condensed with the expand (  ) or condense (  ) button on the upper right corner of the plate.
6. You can also view or edit the sample layout in the **Table view**. To switch to the **Table view**, select the tab above the sample layout.



To enter sample information in the **Table view**:

1. Go to the **Table view** tab within the Sample layout environment.
2. Select the respective sample by tapping on the row.

**Note:** Selection of multiple positions at once is not possible in the **Table view**.

3. Enter the sample name and select the sample name.
4. Changes will be visible upon pressing enter.

## 6 Run an Experiment

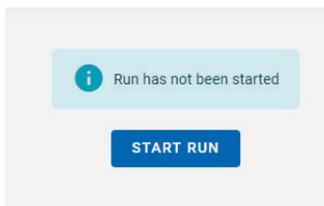
After defining the run profile the experiment run can be started. This section describes how to:

- Start a run
- View a running experiment
- Stop a run

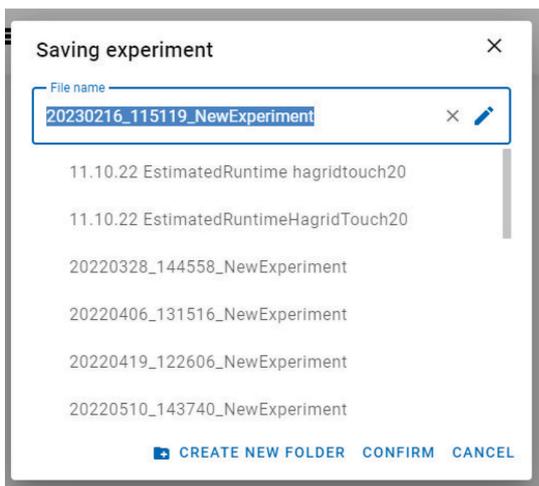
### 6.1 Start a run

To start a run once all required information have been defined:

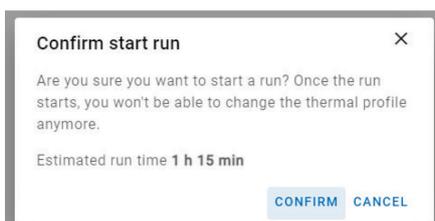
1. Go to the **Run** tab within your experiment
2. Press **Start Run**.



3. If the experiment has not been saved, the user is prompted to save the file before the start of the run. Enter a file name or use the default file name. The default file name consists of the date and time. Press **Confirm**.



4. A dialog opens showing the estimated run time and asking the user to confirm that they really want to start.
5. Press **Confirm** to start the run.



## 6.2 View a running experiment

The progress of a run can be viewed under the **Run** tab. On the run screen, the fluorescence curves and the run progress can be viewed, which are all updated in real time. Sample and run information are displayed as well.

**Note:** During a run, only the tabs within the experiment environment can be viewed and no changes can be applied. Other functions are disabled during the run.



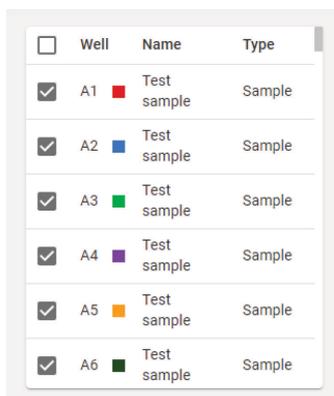
The fluorescence plot (1) at the top of the screen displays the fluorescence curves of all samples activated in the well selector on the right side of the screen. The **Acquisitions** drop-down menu (2) allows for selecting the channels to be displayed in the fluorescence plot.

The run preview (3) at the bottom of the screen shows the run progress. The run information area (4) summarizes general information about the run and shows the estimated run time. The well selector (5) lists information about the samples and allows you to activate or deactivate samples to be displayed in the fluorescence plot.

## 6.2.1 View fluorescence curves during run

The fluorescence plot in the run step is continuously updated throughout a run. The displayed curves are the fluorescence signals detected by the cycler for all activated samples. The horizontal axis of the plot shows the total number of cycles defined in the run profile for a selected cycling phase. The scale of the vertical axis adapts to always display the fluorescence curves with best resolution.

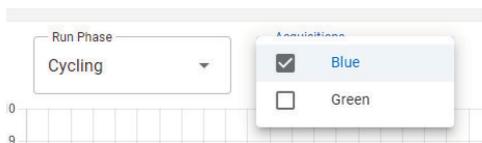
Use the well selector on the right side of the screen to activate a sample so its fluorescence curve is displayed in the plot. Clicking a well activates it, highlighting it with a check mark. Click an activated sample to deactivate it and remove it from the plot.



<input type="checkbox"/>	Well	Name	Type
<input checked="" type="checkbox"/>	A1	Test sample	Sample
<input checked="" type="checkbox"/>	A2	Test sample	Sample
<input checked="" type="checkbox"/>	A3	Test sample	Sample
<input checked="" type="checkbox"/>	A4	Test sample	Sample
<input checked="" type="checkbox"/>	A5	Test sample	Sample
<input checked="" type="checkbox"/>	A6	Test sample	Sample

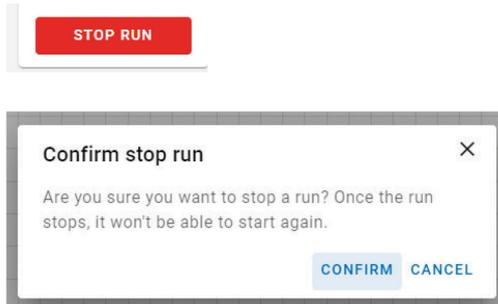
**Note:** Activating or deactivating sample wells during a run does not impact data acquisition of the experiment. This option is only relevant for visualization in the plot.

Use the **Run Phase** drop-down list above the fluorescence plot to change the plot view between different profile phases. The list includes all phases containing an acquisition, as defined in the thermal profile. Acquisitions of a selected phase are displayed next to the selected phase. The acquisitions are labeled with their corresponding channel name, and if a cycling step has multiple acquisitions, they will all be displayed in the drop-down list. You can select multiple acquisitions from the drop-down list.

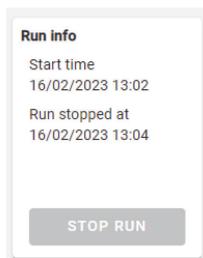


## 6.3 Stop a run

If necessary, you can stop a running experiment at any time. Press **Stop Run**, and confirm if you are sure to stop the run. The instrument will stop and cool down the plate before releasing the instrument lid.



Upon stopping a run, the text "Run stopped" with date and time appears in the Run information table and the action is recorded in the experiment audit trail.



## 7 Administrative Tasks

This section describes the following administrative tasks which can be found in the **Service** and in the **Configuration** environment:

- Audit trail
- Support package
- Extras
- Settings
- User management

**Note:** Depending on the role a user has been assigned to, the service and configuration environment will not be visible.

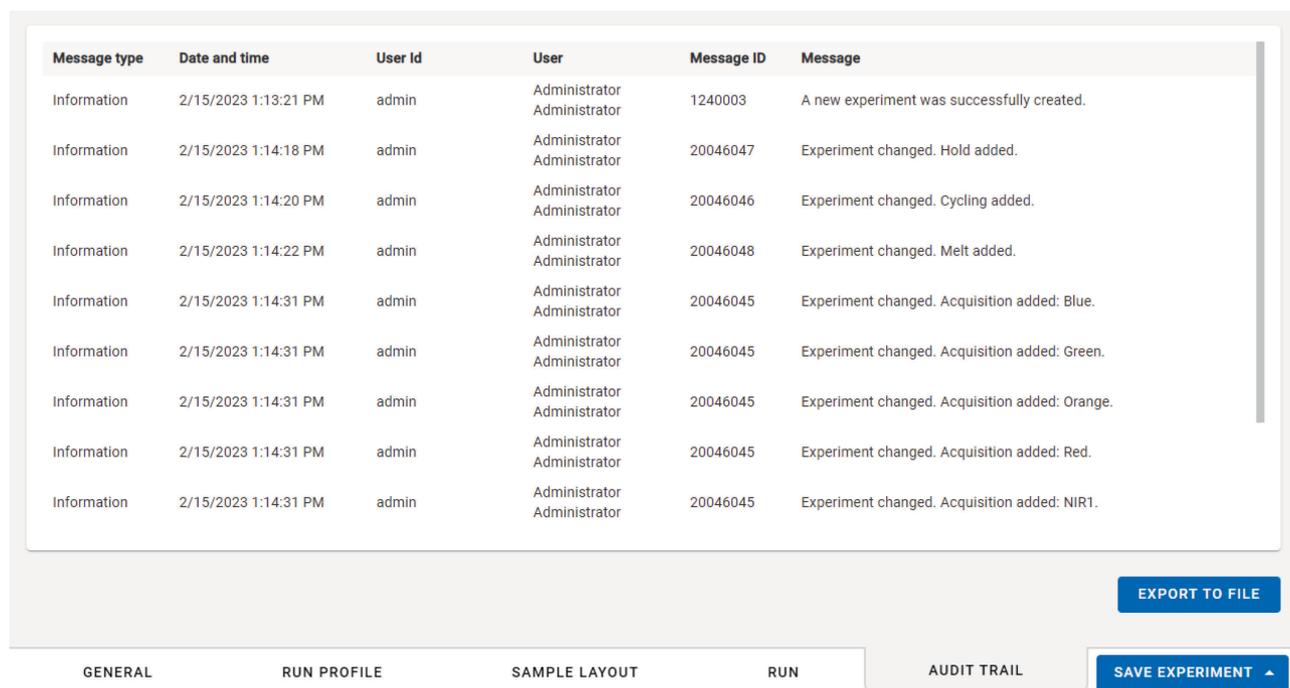
### 7.1 Audit trail

There are 2 types of audit trail within the software: an experiment audit trail that stores actions and changes related to a specific experiment and a system audit trail that stores events related to the system.

- Experiment audit trail
- System audit trail

#### 7.1.1 Experiment audit trail

An experiment audit trail lists all events relevant to an experiment. These events are saved along with the experiment and always available by opening the experiment and selecting the **Audit Trail** tab.



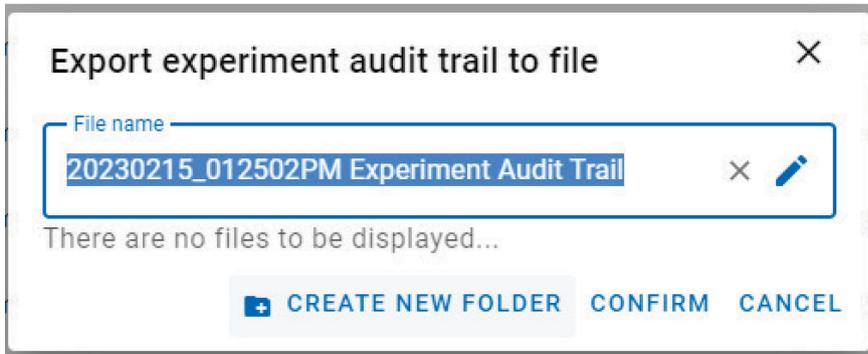
Message type	Date and time	User Id	User	Message ID	Message
Information	2/15/2023 1:13:21 PM	admin	Administrator Administrator	1240003	A new experiment was successfully created.
Information	2/15/2023 1:14:18 PM	admin	Administrator Administrator	20046047	Experiment changed. Hold added.
Information	2/15/2023 1:14:20 PM	admin	Administrator Administrator	20046046	Experiment changed. Cycling added.
Information	2/15/2023 1:14:22 PM	admin	Administrator Administrator	20046048	Experiment changed. Melt added.
Information	2/15/2023 1:14:31 PM	admin	Administrator Administrator	20046045	Experiment changed. Acquisition added: Blue.
Information	2/15/2023 1:14:31 PM	admin	Administrator Administrator	20046045	Experiment changed. Acquisition added: Green.
Information	2/15/2023 1:14:31 PM	admin	Administrator Administrator	20046045	Experiment changed. Acquisition added: Orange.
Information	2/15/2023 1:14:31 PM	admin	Administrator Administrator	20046045	Experiment changed. Acquisition added: Red.
Information	2/15/2023 1:14:31 PM	admin	Administrator Administrator	20046045	Experiment changed. Acquisition added: NIR1.

EXPORT TO FILE

GENERAL RUN PROFILE SAMPLE LAYOUT RUN **AUDIT TRAIL** SAVE EXPERIMENT

To create an audit trail file:

1. Press **Export to file** button within the **Audit trail** tab.
2. Enter a file name for the audit trail and the location where it should be saved.



**Note:** You can only enter and create folders in the respective user directory.

3. Press **Confirm** to save the audit trail file. Audit trails are saved as \*.txt files.

### 7.1.2 System audit trail

The system audit trail can be accessed in the **Service** environment.

MY Q-REX   EXPERIMENTS   STORAGE   **SERVICE**   CONFIGURATION   LOGOUT

---

**Date & time**

Date from  
2/15/2023 12:00:0

Date to  
2/15/2023 11:59:5

**User**

All users  
 This user  
 Specific

User ID

**Context**

Context  
Installation, Settings,...

**RESET**   **APPLY**

Context	Date & time	User	Message ID	Text
Session	2/15/2023 1:13:21 PM	Administrator Administrator (admin)	20046026	A new empty experiment is created.
Session	2/15/2023 1:11:24 PM	Administrator Administrator (admin)	20046026	A new empty experiment is created.
Session	2/15/2023 12:31:53 PM	Administrator Administrator (admin)	20046034	A new experiment is created from template file C:\Users\Public\Documents\QIAGEN\QREx\data\admin\Ter template.qret.
Session	2/15/2023 12:27:29 PM	Administrator Administrator (admin)	20046026	A new empty experiment is created.
Session	2/15/2023 12:27:25 PM	Administrator Administrator (admin)	140009	admin logged in successfully in Closed Mode.

**EXPORT TO FILE**

SYSTEM AUDIT TRAIL   SUPPORT PACKAGE   EXTRAS

The audit trail screen is split into 2 sections: on the left side, options to filter the events list, and on the right side, the list of events.

The following actions can be taken:

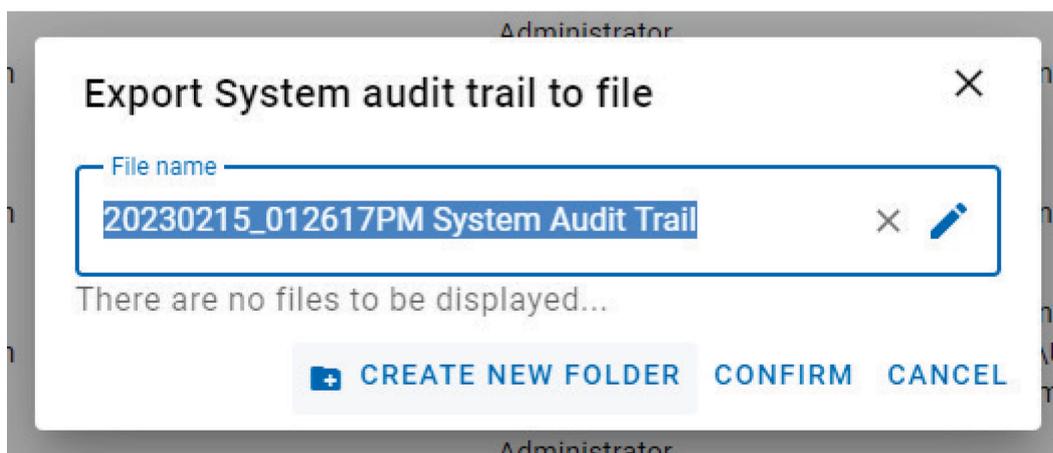
- Use the filter options to limit the list of events and corresponding messages to those you need (by date & time, user, context or message ID) and press **Apply**.
- Press **Reset** to reset all filter settings to their default values.
- Press **Export to file** to save the filtered events list to a file.

To create a system audit trail file:

1. Press **Export to file** button within the **System audit trail** tab.

**Note:** The events list according to the selected filters will be exported.

2. Enter a file name for the audit trail and the location where it should be saved.



**Note:** You can only enter and create folders in the respective user directory.

3. Press **Confirm** to save the audit trail file. Audit trails are saved as \*.txt files.

## 7.2 Support package

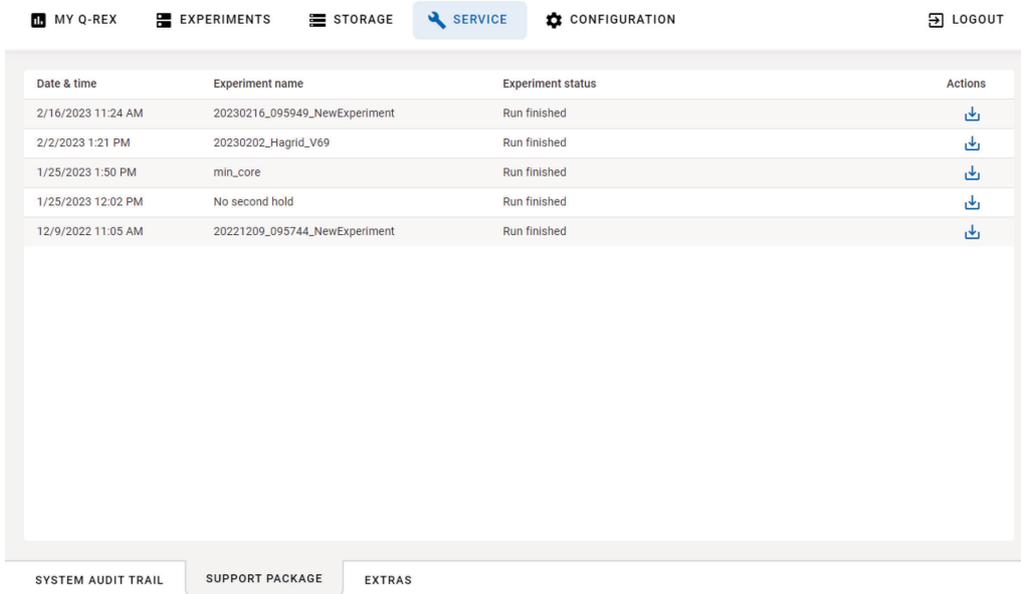
For problems with a specific experiment, a support package can be created and send to QIAGEN Technical Services to help troubleshooting.

Support packages are folders containing multiple files that help QIAGEN Technical Services to analyze entries and events that may contribute to an error or issue with an experiment or instrument.

**Note:** Support packages that are older than 90 days are deleted automatically.

To export a support package to send it to QIAGEN Technical Services:

1. Enter the **Service** environment and go to the **Support Package** tab.

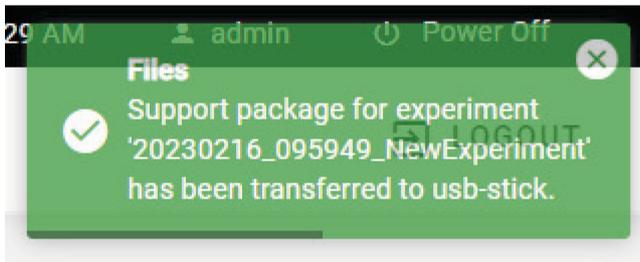


The screenshot shows the Q-Rex interface with the 'SERVICE' tab selected. Below the navigation bar is a table with the following data:

Date & time	Experiment name	Experiment status	Actions
2/16/2023 11:24 AM	20230216_095949_NewExperiment	Run finished	
2/2/2023 1:21 PM	20230202_Hagrid_V69	Run finished	
1/25/2023 1:50 PM	min_core	Run finished	
1/25/2023 12:02 PM	No second hold	Run finished	
12/9/2022 11:05 AM	20221209_095744_NewExperiment	Run finished	

Below the table are three tabs: 'SYSTEM AUDIT TRAIL', 'SUPPORT PACKAGE', and 'EXTRAS'. The 'SUPPORT PACKAGE' tab is currently selected.

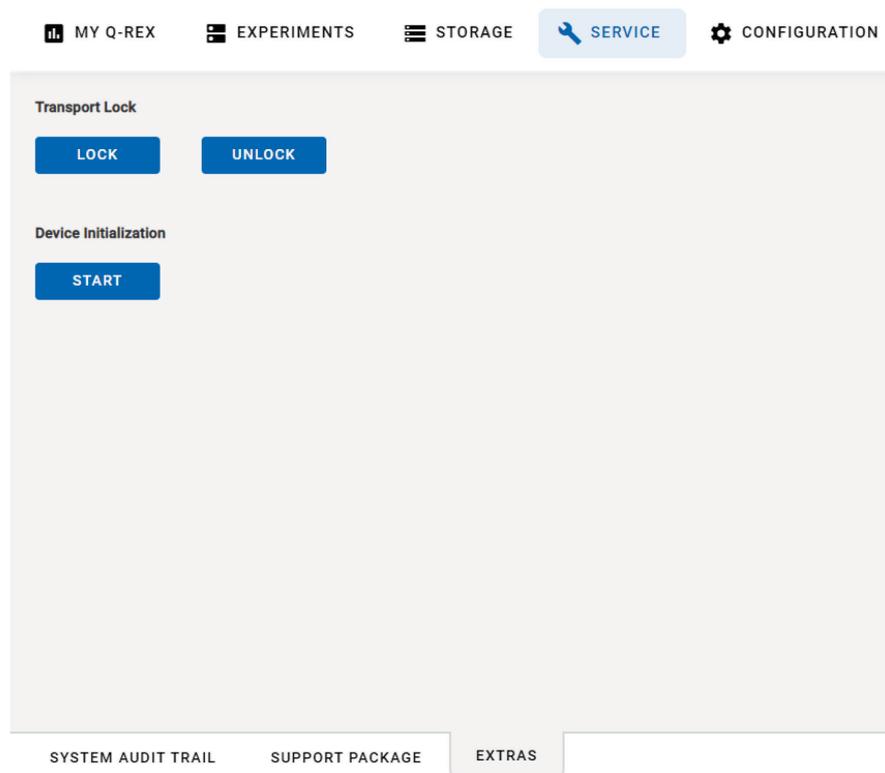
2. Click the download icon () next to the support package from the experiment in which the error occurred. The support package will be automatically downloaded to a connected USB-drive. A notification will appear once the support package has been successfully transferred.



## 7.3 Extras

The **Extras** tab within the **Service** environment includes functions for:

- Transport Lock
- Device Initialization

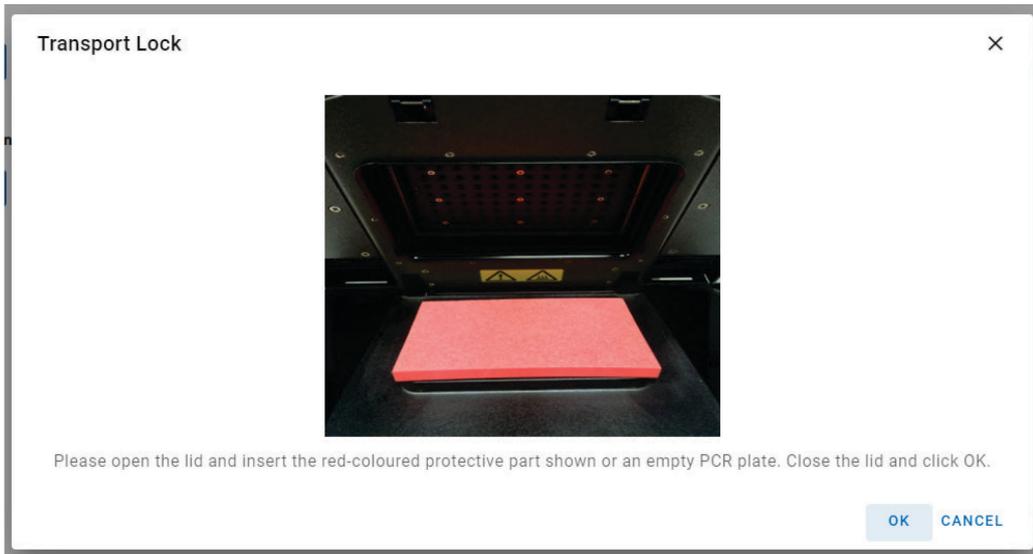


### 7.3.1 Transport Lock

The transport lock allows you to (de)activate the transport lock that is available on the QIAquant. This option is available to prepare the QIAquant instrument for transport. If activated, the instrument will clamp down the lid to prevent damage during transport.

To active the transport lock:

1. Press the **Lock** button.
2. A pop-up window appears with instructions.
3. Insert the red foam plate or an empty PCR plate into the block, and press **OK** to active the transport lock.



The transport lock is automatically released upon device initialization or switching on the instrument. In case the transport lock should be deactivated without re-starting the instrument, press the **Unlock** button.

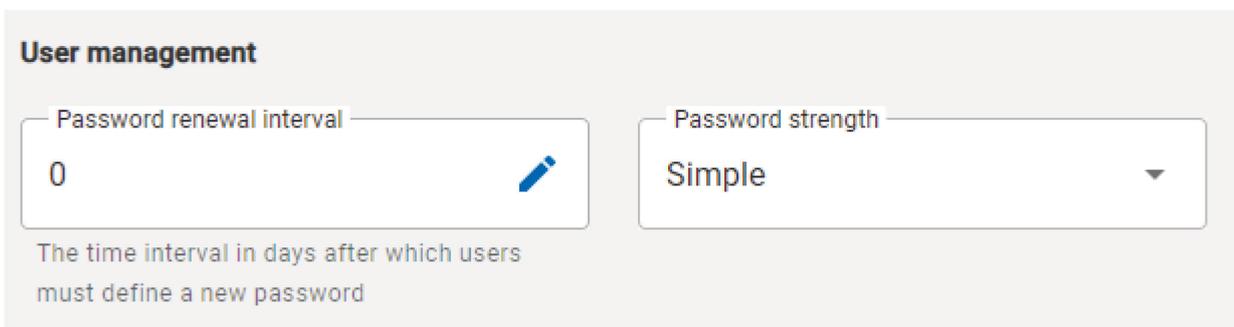
### 7.3.2 Device Initialization

The device initialization can be used if the instrument no longer responds to inputs. This function can be used to reset the instrument.

The device initialization can be found in the **Service** environment under **Extras**. Press **Start** to perform the device initialization.

## 7.4 Settings

Under **Settings**, the password options for the user management can be managed. The **Settings** tab is located in the **Configuration** environment. The following password criteria can be set.



### 7.4.1 Password renewal interval

Enter the time interval after which users must define a new password. Passwords will not expire if you enter 0 or if you leave the field blank.

### 7.4.2 Password strength

You can set the password strength to:

- **Simple:** Use this option if authentication of users is not required. This policy allows you to use short passwords or use an empty **Password** field. The password may have 0–40 characters.
- **Medium:** Use this option if authentication of users is required. The password must have 8–40 characters.
- **Strong:** Use this option if high security authentication is required. The password must have 8–40 characters and must contain a minimum of 2 lowercase letters, 2 uppercase letters, 2 numbers, and 2 special characters.

## 7.5 User management

User accounts for the Q-Rex Touch Software can be managed in the **Configuration** environment.

The screenshot shows the Configuration environment with the following elements:

- Navigation bar: MY Q-REX, EXPERIMENTS, STORAGE, SERVICE, CONFIGURATION (active), LOGOUT
- Section: User Management
- Table with columns: User ID, First Name, Last Name, E-mail, Roles, Actions
- Table content: admin, Administrator, Administrator, john@doe.com, Administrator, [edit] [delete]
- Filter:  show only activated user profiles
- Button: CREATE USER
- Bottom tabs: SETTINGS, USER MANAGEMENT (active)

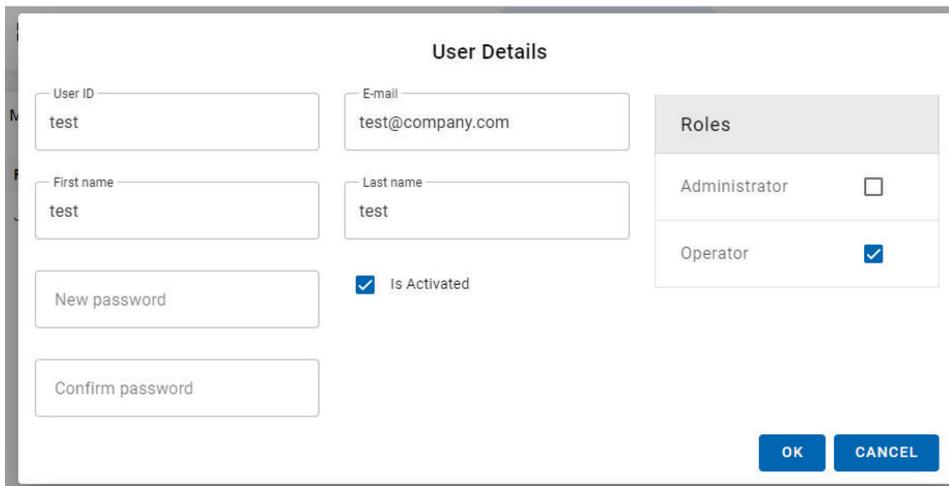
To edit existing users:

1. Go to the **User Management** tab within the **Configuration** environment.

- By default all activated user profiles are displayed in the table. To show also deactivated user profiles, uncheck the **show only activated user profiles** option at the lower left corner of the screen.
- Press on the pencil icon (  ) under **Actions** to edit an account.
- Change the user details as required.

**Note:** The User ID cannot be changed.

**Note:** Multiple roles can be assigned to the same user.



**User Details**

User ID: test

E-mail: test@company.com

First name: test

Last name: test

New password:

Confirm password:

Is Activated

**Roles**

Administrator	<input type="checkbox"/>
Operator	<input checked="" type="checkbox"/>

OK CANCEL

- Press **OK** to confirm changes.

**Note:** Upon applying changes to the user that is currently logged in, the user is asked to log in again.

To create new users:

- Go to the **User Management** tab within the **Configuration** environment.
- Press **Create User**.
- Enter user detail.

**Note:** User ID, first name, last name, and assigned role are mandatory fields. In case of an administrator account being created, additionally the email is mandatory.

- Press **OK** to confirm.

To delete existing users:

- Go to the **User Management** tab within the **Configuration** environment.
- Press the **X** under actions to delete the respective user
- Confirm that the user profile should be removed permanently by pressing **OK**.

## 8 Troubleshooting

This section provides information about what to do if an error occurs when using the QIAquant system.

If further assistance is required, contact QIAGEN Technical Services using the contact information below:

Website: [support.qiagen.com](https://support.qiagen.com)

When contacting QIAGEN Technical Services about an error with the QIAquant, note the steps leading up to the error and any information appearing in any dialog boxes. This information will help the QIAGEN Technical Services solve the problem.

When contacting QIAGEN Technical Services about errors, please have the following information ready:

- QIAquant serial number, type, and version
- Software version (if applicable)
- Timepoint when the error occurred for the first time
- Frequency of error occurrence (i.e., intermittent or persistent error)
- Detailed description of the error situation
- Photo of the error, if possible
- Copy of log files
- Support package of experiment

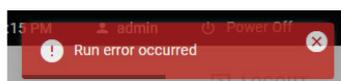
This information will help you and your QIAGEN Technical Service Specialist to deal most efficiently with your issue.

**Note:** Information about the latest software and protocol versions can be found at [www.qiagen.com](https://www.qiagen.com). In some cases, updates may be available for addressing specific problems.

### 8.1 Hardware and software errors

If during operation a hardware or software error is detected a general error notification is shown to the user. The error is displayed in the upper right corner.

In most cases the error contains information on what went wrong and how it can be prevented. In the case of hardware errors this description will not be provided to the user and only a general error notification is shown. Exception to this are errors from opening the lid during a run or with errors occurring during a self-test of the instrument.



If other hardware or software errors occur during the operation of the instrument, please contact QIAGEN Technical Services and provide them with the support package that will be automatically generated after each run.

# Appendix A

## License Terms

The license terms for all software used with Q-Rex, including QIAGEN software components, commercial software components and open source software components, are provided in the files **licenses.rtf** and **Prerequisite.LicenseAgreements.rtf** located on the QIAquant workstation under the following paths:

C:\ProgramData\QIAGEN\Q-Rex\licenses.rtf

C:\ProgramData\QIAGEN\Q-Rex\Prerequisite.LicenseAgreements.rtf.

## Liability Clause

QIAGEN shall be released from all obligations under its warranty in the event repairs or modifications are made by persons other than its own personnel, except in cases where the Company has given its written consent to perform such repairs or modifications.

All materials replaced under this warranty will be warranted only for the duration of the original warranty period, and in no case beyond the original expiration date of original warranty unless authorized in writing by an officer of the Company. Read-out devices, interfacing devices, and associated software will be warranted only for the period offered by the original manufacturer of these products. Representations and warranties made by any person, including representatives of QIAGEN, which are inconsistent or in conflict with the conditions in this warranty shall not be binding upon the Company unless produced in writing and approved by an officer of QIAGEN.

# Document Revision History

Revision	Description
March 2023	Initial release.

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