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# QIAreacH<sup>®</sup> eHub User Manual



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# Contents

|     |  |    |
|-----|--|----|
| 1   | Introduction .....                               | 5  |
| 1.1 | About this user manual .....                     | 5  |
| 1.2 | General Information .....                        | 6  |
| 1.3 | Intended use of the QIAreach eHub .....          | 6  |
| 1.4 | Symbols on the QIAreach eHub .....               | 8  |
| 2   | Safety Information .....                         | 10 |
| 2.1 | Proper use .....                                 | 11 |
| 2.2 | Electrical safety .....                          | 11 |
| 2.3 | Chemical safety .....                            | 11 |
| 2.4 | Biological safety .....                          | 12 |
| 2.5 | Waste disposal .....                             | 12 |
| 3   | General Description .....                        | 13 |
| 3.1 | System description .....                         | 13 |
| 3.2 | QIAreach eHub description .....                  | 13 |
| 4   | Installation Procedures .....                    | 15 |
| 4.1 | Site requirements .....                          | 15 |
| 4.2 | QIAreach eHub delivery and components .....      | 16 |
| 4.3 | Unpacking and installing the QIAreach eHub ..... | 18 |
| 5   | Operating the QIAreach eHub .....                | 19 |
| 5.1 | Setting up the QIAreach eHub for use .....       | 19 |
| 5.2 | Running a test on the QIAreach eHub .....        | 20 |
| 5.3 | Shutting down the QIAreach eHub .....            | 21 |
| 5.4 | Software updates .....                           | 21 |
| 6   | QIAreach eHub Functions .....                    | 22 |
| 6.1 | Display screen icons .....                       | 22 |
| 6.2 | Battery LED indicator .....                      | 23 |
| 7   | Maintenance .....                                | 24 |
| 7.1 | Cleaning the QIAreach eHub after use .....       | 24 |
| 8   | Troubleshooting .....                            | 25 |

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|      |   |    |
|------|---|----|
| 8.1  | General information.....                                  | 25 |
| 8.2  | Contacting QIAGEN Technical Services.....                 | 25 |
| 8.3  | QIAreach eHub error codes.....                            | 25 |
| 9    | Technical Specifications.....                             | 31 |
| 10   | Appendix A – Technical Data.....                          | 33 |
| 10.1 | FCC Compliance: Supplier’s Declaration of Conformity..... | 33 |
| 10.2 | Waste Electrical and Electronic Equipment (WEEE).....     | 35 |
| 10.3 | Disclaimer of warranties.....                             | 35 |
| 11   | Ordering Information.....                                 | 36 |
| 12   | Document Revision History.....                            | 37 |

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# 1 Introduction

This manual describes how to operate the QIAreach® eHub (also referred to as eHub in this document). Before using the QIAreach eHub, it is essential that you read this user manual carefully and pay particular attention to the safety information. The instructions and safety information in the user manual must be followed to ensure safe operation of the instrument and to maintain the instrument in a safe condition.

## 1.1 About this user manual

This user manual provides information about QIAreach eHub in the following sections:

- Introduction
- Safety Information
- General Description
- Installation Procedures
- Operation
- System Functions
- Maintenance
- Troubleshooting
- Technical Specifications

The Appendix section contains the following information:

- Declaration of Conformity
- Waste Electrical and Electronic Equipment (WEEE)
- Disclaimer of warranties

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## 1.2 General Information

### 1.2.1 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 QIArearch eHub or QIAGEN products in general, do not hesitate to contact us.

For technical assistance and more information, please see our Technical Support Center at [www.qiagen.com/support/technical-support](http://www.qiagen.com/support/technical-support) or call one of the QIAGEN Technical Service Departments or local distributors (see back cover or visit [www.qiagen.com](http://www.qiagen.com)).

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

- QIArearch eHub serial number
- Test type and test kit lot number
- Error code (if applicable)
- Timestamp when the error occurred for the first time
- Frequency of error occurrence (i.e., intermittent or persistent error)
- Photo of error, if possible

### 1.2.2 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 Intended use of the QIArearch eHub

The QIArearch eHub is intended for use in conjunction with QIArearch in vitro diagnostic tests. QIArearch technology on the digital detection eStick provides diagnostic results that are displayed to the user on the QIArearch eHub visual display.

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The QIAreach eHub and QIAreach test systems are intended for professional use only and not intended for self-testing.

### 1.3.1 Limitations of use

- The QIAreach eHub can only be used with QIAreach eSticks according to the instructions contained in this user manual and in the applicable QIAreach test Instructions for Use.
- When powering the QIAreach eHub or connecting to a computer, use only the USB cable supplied with this product.
- When charging the QIAreach eHub, use only the USB charger and USB cable supplied with this product.
- The QIAreach eHub should only be operated on a flat, horizontal surface with no angles or tilts.
- Do not re-run a QIAreach assay eStick if it has already been used successfully or if it has been associated with an error or an incomplete run.
- Ensure that the QIAreach eHub is positioned away from any air conditioning outlets, heaters, or sources of intense light.
- Do not move the QIAreach eHub while a test is running.
- Do not remove a QIAreach test eStick from the eHub before the run has completed.



## 1.4 Symbols on the QIAreach eHub

The following symbols may appear on the packaging or labelling.

| Symbol  | Location                                   | Description   |
|---|--|---|
|    | Type plate and outer box label of the eHub | CE mark   |
|    | Type plate on the bottom of the eHub       | FCC Mark  |
|    | Type plate and outer box label of the eHub | WEEE Mark for Europe  |
|    | Type plate and outer box label of the eHub | Legal Manufacturer  |
|   | Type plate and outer box label of the eHub | Catalog Number  |
|  | Type plate and outer box label of the eHub | Serial Number   |
|  | Type plate and outer box label of the eHub | Global Trade Item Number  |
|  | Outer box label of the eHub                | Fragile   |
|  | Type plate and outer box label of the eHub | Electrical Safety Regulatory Compliance Mark (Australia and New Zealand)  |
|  | Type plate and outer box label of the eHub | Consult Instructions for Use  |
|  | Type plate and outer box label of the eHub | Attention   |
|  | Type plate and outer box label of the eHub | RoHS mark for China (the restriction of the use of certain hazardous substances in electrical and electronic equipment) |



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|   |  |  |
|---|--|--|
|  | Type plate and outer box label of the eHub | UL mark that indicates the instrument complies with the applicable standards for electrical safety |
|  | Front of the eHub                          | Biohazard  |



## 2 Safety Information

Before using the QIAreach eHub, it is essential that you read this user manual carefully and pay particular attention to the safety information. The instructions and safety information in the user manual must be followed to ensure safe operation of the eHub and to maintain a safe working condition.

Possible hazards that could harm the user or result in damage to the instrument are clearly stated at the appropriate places throughout this user manual.

If the QIAreach eHub is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

The following types of safety information appear throughout the *QIAreach eHub User Manual*.

|  |  |
|--|--|
| <p>WARNING</p>   | <p>The term <b>WARNING</b> is used to inform you about situations that could result in personal injury to you or others.</p> <p>Details about these circumstances are given in a box like this one.</p>                  |
| <p>CAUTION</p>  | <p>The term <b>CAUTION</b> is used to inform you about situations that could result in damage to the QIAreach eHub or to other equipment.</p> <p>Details about these circumstances are given in a box like this one.</p> |
| <p>Important</p>   | <p>The term <b>Important</b> is used to highlight information that is critical for the completion of a task or optimal performance of the system.</p>  |
| <p>Note</p>  | <p>The term <b>Note</b> is used for information that explains or clarifies a specific case or task.</p>  |


The guidance provided in this manual is intended to supplement, not supersede, the normal safety requirements prevailing in the user's country.

## 2.1 Proper use

- Use the QIAreach eHub according to this user manual. We highly recommend to carefully read and become acquainted with the Instructions for Use before running a QIAreach test.
- Improper use of the QIAreach eHub may cause personal injuries or damage to the eHub.
- The QIAreach eHub must only be operated by qualified and appropriately trained QIAGEN personnel.

## 2.2 Electrical safety


Observe all general safety precautions that apply to electrical instruments. This device has been tested for compliance with electrical safety requirements as per IEC 61010-1: Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements.

|   |  |
|---|--|
| <p><b>WARNING/<br/>CAUTION</b></p>  | <p>Do not open the QIAreach eHub. No user-serviceable parts inside. (W1)<br/>Opening of the eHub device could lead to user injury or damage of the device.</p> |
|---|--|

## 2.3 Chemical safety

Safety Data Sheets (SDSs) for QIAreach test kit materials are available and can be requested from QIAGEN. Used QIAreach assay eSticks should be disposed of in accordance with all national, state, and local health and safety regulations and laws.

## 2.4 Biological safety

|   |  |
|---|--|
| <p><b>WARNING</b></p>  <p><b>BIOHAZARD</b></p> | <p>Spilling or leakage of test samples has the potential to introduce (W2) biohazardous material onto the exterior surfaces of the QIArearch eHub. Refer to the Maintenance section of this user manual for instructions on cleaning the QIArearch eHub. Use suitable disinfectants. The QIArearch eHub itself does not contain any biohazardous material.</p> |
|---|--|

Samples tested on the QIArearch eHub may contain infectious agents. Users should be aware of the health hazard presented by such agents and should use, store and dispose of such samples according to the required safety regulations. Wear personal protective equipment when handling reagents or samples, and wash hands thoroughly thereafter.

Always observe safety precautions as outlined in relevant guidelines. Avoid contamination of the QIArearch eHub and workspace by handling samples and QIArearch test eSticks with care. In the event of contamination, clean and decontaminate the affected area of the QIArearch eHub.

For instructions on cleaning and decontaminating the QIArearch eHub, see Maintenance.

## 2.5 Waste disposal

For disposal of waste electrical and electronic equipment (WEEE), see Waste Electrical and Electronic Equipment (WEEE).

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## 3 General Description

### 3.1 System description

The QIAreach eHub, in combination with QIAreach assay eSticks, provides a simplified workflow for multiple in vitro diagnostic tests, using state-of-the-art nanoparticle fluorescence detection technology. QIAreach assay eSticks are single-use tests that include a lateral flow strip and optoelectronics that perform test measurements and interpret results. The QIAreach eHub provides power to the QIAreach test eStick to run the test when the test eStick is connected to any one of the eHub eStick ports. The QIAreach eHub visually communicates test progress and results to the user via a display screen specific to each eHub port.

Optional PC software is provided with the QIAreach eHub. The QIAreach eHub will transmit test information and results when connected to a computer running QIAreach software.

### 3.2 QIAreach eHub description

The QIAreach eHub is a connection hub that provides power to perform multiple QIAreach tests simultaneously. The eHub is connected to a power source using the provided connection cable and features a rechargeable lithium battery to allow QIAreach tests to be performed when a continuous power supply is not available. QIAreach test results are interpreted on the QIAreach test eStick firmware, and results are transmitted to the eHub which then communicates to the user by means of a visual display.

The QIAreach eHub USB charger and USB cable allow the eHub to be powered from either an electrical outlet or from a computer equipped with USB ports. Use of the optional QIAreach software requires the QIAreach eHub to be connected to a computer. For instructions on how to use the software, refer to *QIAreach Software User Guide*.

The QIAreach eHub includes the following elements:

- QIAreach eStick connection ports for up to eight (8) separate tests
- Visual display screen centered above each individual eStick connection port
- QIAreach test processing tube holder slot positioned directly behind each visual display screen
- QIAreach test sample tube holder slot positioned directly behind each processing tube holder slot, to be used for applicable QIAreach tests
- USB-C port for connection to a USB charger (supplied) or computer

- Battery LED indicator

Figures 1 and 2 show the location of various QIArearch eHub features.

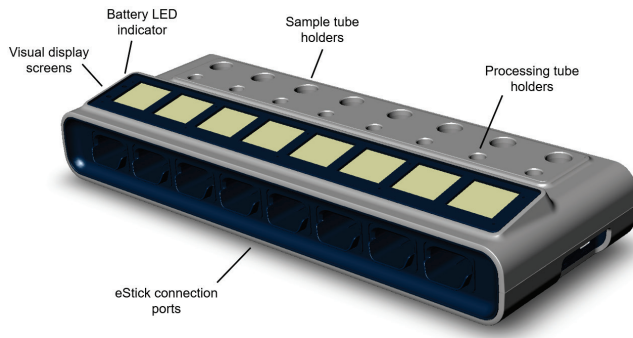


Figure 1. Front view of QIArearch eHub.

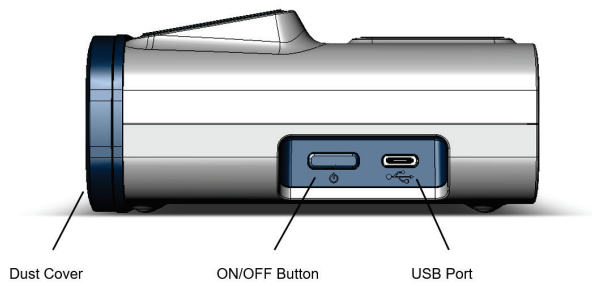


Figure 2. Side view of QIArearch eHub.

## 4 Installation Procedures

### 4.1 Site requirements

Select a flat, dry, and clean workbench space for the QIAreach eHub. Make sure that the space is free of excessive moisture and dust, protected from direct sunlight, large temperature fluctuations, heat sources, vibration and electrical interference. Refer to Technical Specifications for the weight and dimensions of the QIAreach eHub and correct operating conditions (temperature and humidity). There should be sufficient clearance on the workbench to allow unimpeded access to the eStick connection ports, USB port, and ON/OFF button.

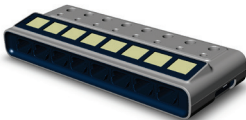

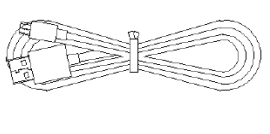
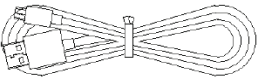
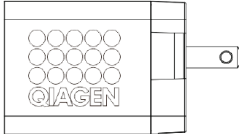
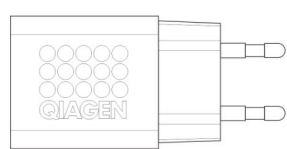
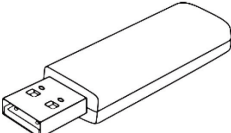
**Note:** Before installing and using the QIAreach eHub, see Operating the QIAreach eHub to become familiar with the QIAreach eHub operating conditions.

|                |  |
|----------------|--|
| <b>CAUTION</b> | Do not place the QIAreach eHub in close proximity to sources of strong (C2) electromagnetic radiation (e.g., unshielded intentional RF sources), as these can interfere with proper operation. For more information, see FCC Compliance: Supplier's Declaration of Conformity. |
|----------------|--|

## 4.2 QIAreach eHub delivery and components




The QIAreach eHub is delivered in a single box and includes all the necessary components for setting up and connecting the eHub. The contents of the box are described below:

Note: QIAreach tests kits (sold separately) are required to perform QIAreach testing.

| Components  | Description   |
|---|---|
|    | 1x QIAreach eHub  |
|    | 1x Dust cover   |
|  | 1x USB drive containing QIAreach PC software            |
|  | 1x USB-C – USB-A Cable, 1.5m length                     |
|  | 1x USB Charger Power adapter with region specific plugs |
|  | 1x USB Charger Power adapter with fixed EU plug         |
|  | 1x USB storage device containing QIAreach Software      |



The following components are required for testing but are provided in separate test kits. These components can be purchased separately.

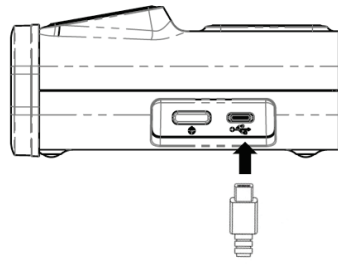
| <b>Components</b>  | <b>Description</b>                  |
|--|-------------------------------------|
|   | QIArearch eStick – product specific |
|   | Processing Tube – product specific  |
|  | Buffer – product specific           |

### 4.3 Unpacking and installing the QIAreach eHub

The QIAreach eHub is delivered ready for use and does not require any hands-on assembly procedures.

Remove the QIAreach eHub from its delivery box and place on a flat, level surface.

The QIAreach eHub should be charged prior to use. To charge the eHub, connect the USB cable from the QIAreach eHub USB port to either the supplied power adapter or to a computer. While charging, the Battery LED indicator flashes a green light. When fully charged, then light changes to a solid green if the unit is on.



**Figure 3. Connecting the USB cable to the QIAreach eHub USB port.**

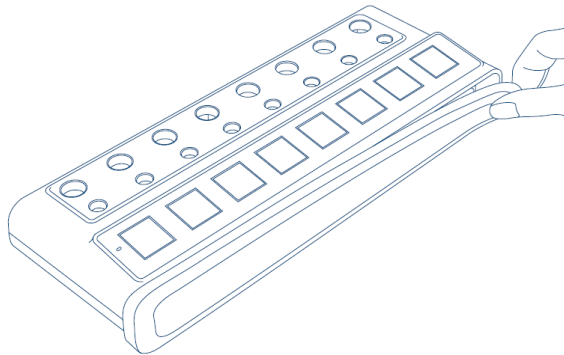
**Note:** The QIAreach eHub will charge more quickly when charged through the supplied USB charging adapter, compared to when it is charged through a computer USB port.

The QIAreach eHub comes with a dust cover to protect the internal ports from dust buildup and contamination. The cover should always be placed over the front panel of the eHub when not in use. When ready to operate the eHub, the dust cover can be removed from the front panel and set aside.

## 5 Operating the QIAreach eHub

### 5.1 Setting up the QIAreach eHub for use

1. Remove the dust cover from the front panel of the QIAreach eHub and set aside.

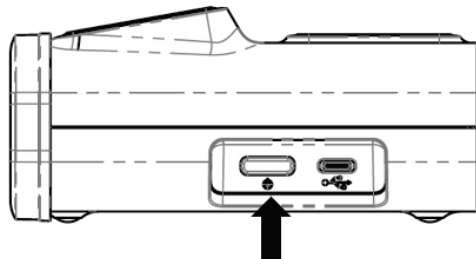


**Figure 4. Removing the dust cover from the front of QIAreach eHub prior to use.**

2. Ensure that the provided USB cable is connected to the QIAreach eHub and an adequate power source (power outlet or computer).

**Note:** We recommend to fully charge the QIAreach eHub in a switched off state overnight (when not in use). We also recommend that you connect the eHub to a USB power source (either a USB adapter or computer) during operation. If testing is performed without the use of associated QIAreach software, then we recommend to connect the QIAreach eHub to a power outlet (if available) through the provided USB power adapter and USB cable.

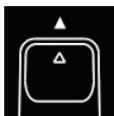
3. To turn on the QIAreach eHub, press ON/OFF on the side of the unit until the visual display screen lights up.



**Figure 5. Press the ON/OFF switch to turn on the QIAreach eHub.**

4. Check battery LED indicator to ensure that the eHub has sufficient charge for the test operation. For different battery LED indicator states, see Battery LED indicator.

Once the QIAreach eHub is ready for use, the visual display screen above each available QIAreach eStick connection port will display the “Insert eStick” icon shown below.



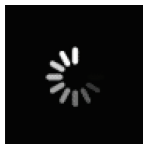
**Figure 6. Insert eStick icon.** This signifies that a QIAreach eHub port is available for use.

## 5.2 Running a test on the QIAreach eHub

**Important:** The steps described in this section are general test workflow cues provided on the QIAreach eHub visual display screen. Refer to the applicable QIAreach test Instructions for Use for instructions on performing a test with the QIAreach eHub.

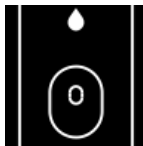
**Note:** Each of the connection ports on the QIAreach eHub operates separately. Up to eight (8) QIAreach tests can be run simultaneously.

1. When a QIAreach test eStick has been inserted in a QIAreach eHub connection port, the self-test icon will be displayed while the eStick performs a self-test.



**Figure 7. Self-test screen display.**

2. Once the eStick self-test has successfully completed, the “Add sample” icon will be displayed, signifying the eStick is ready for sample addition.



**Figure 8. Add sample screen display.**

3. After the test sample has been added to the eStick, the “Processing” icon will be displayed along with a test countdown timer.

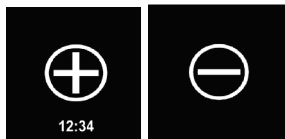
**Note:** Sample detection may take up to one minute.

**Important:** The eStick must not be removed from the QIAreach eHub until the test has been completed.



**Figure 9. Processing screen display and countdown timer.**

4. Once the QIAreach test is completed, the test result will be displayed on the screen and the QIAreach test eStick can be safely removed.



**Figure 10. Test result screen.** Positive and negative test results.

5. If an error occurs during the test, the error icon will appear along with a specific error code. Refer to the Troubleshooting section of this manual for more information.



**Figure 11. Error icon and associated error code.**

### 5.3 Shutting down the QIAreach eHub

After use, the QIAreach eHub should be turned off by pressing and holding the ON/OFF button for >2.5 seconds. The QIAreach eHub battery will continue to charge when turned off if connected to a power source.

After each use, clean the eHub according to the instructions in *Cleaning the QIAreach eHub after use*.

Replace the dust cover on the front panel of the QIAreach eHub to protect the eStick connection ports from moisture and dust.








### 5.4 Software updates

QIAreach eHub software updates are posted on [www.qiagen.com](http://www.qiagen.com) and can be downloaded using the QIAreach software. Refer to *QIAreach Software User Guide* for instructions on how to update the eHub software.

# 6 QIAreach eHub Functions

## 6.1 Display screen icons






Table 1. Display screen icons

| Icon  | ID                          | Description   |
|---|-----------------------------|---|
|    | Please Insert               | The QIAreach eHub port is available for eStick use.   |
|    | Self-test                   | The eStick has been inserted and a self-test is being performed.  |
|    | Add sample                  | The eStick is ready for sample addition to the detection port. The sample must be added within 60 minutes of removing the eStick from the foil packaging.   |
|    | Processing                  | The eStick has detected sample and is processing the test. A test countdown timer is displayed. Do not remove the eStick until a result is displayed. Test times may vary across QIAreach products. |
|   | Positive (varies with test) | The test has returned a positive result.  |
|  | Negative (varies with test) | The test has returned a negative result.  |
|  | Error                       | The test has encountered an error. The letter denotes the type and the numbers are code for the error. Refer to the Troubleshooting section for more information.                                   |

## 6.2 Battery LED indicator

If not connected to a power source, the QIAreach eHub should have sufficient battery power to complete all in-progress QIAreach tests. A fully charged QIAreach eHub should maintain internal battery power for at least 8 hours. QIAreach tests should not be performed if the battery power is less than 10% and is not connected to a power source. The battery level can be checked by connecting the QIAreach eHub to a computer through the provided USB cable and launching the QIAreach software. The software displays the level of battery charge in the bottom right hand corner of the screen. The battery level is also indicated by the various battery LED states listed below.




**Table 2. Battery levels**

| Display   | LED state      | Meaning  |
|---|----------------|--|
| None  | off            | The QIAreach eHub is off.                                |
|    | Flashing green | Battery charging in progress.                            |
|    | Solid green    | The QIAreach eHub is turned on, battery charge > 50%.    |
|   | Solid amber    | The QIAreach eHub is turned on, battery charge 10 – 50%. |
|  | Solid red      | The QIAreach eHub is turned on, battery charge < 10%.    |
|  | Flashing red   | The QIAreach eHub is turned on, battery fault.           |

## 7 Maintenance

The QIAreach eHub does not require any service maintenance or calibration.

### 7.1 Cleaning the QIAreach eHub after use

|  |  |
|--|--|
| <p><b>WARNING/<br/>CAUTION</b></p>  | <p>Risk of personal injury and material damage (W2)</p> <p>Disconnect the QIAreach eHub from all power sources before cleaning. (C3)</p> <p>Ensure that the QIAreach eHub is turned off before cleaning.</p> |
| <p><b>CAUTION</b></p>              | <p>Risk of damage to the QIAreach eHub (C4)</p> <p>When cleaning, avoid any deliberate water ingress into the eStick connection ports.</p>   |
| <p><b>CAUTION</b></p>             | <p>Risk of damage to the QIAreach eHub (C5)</p> <p>Avoid the use of excessive volumes of liquid that could enter the interior of the unit when cleaning the QIAreach eHub.</p>                               |

Only use the following materials to clean the QIAreach eHub exterior surfaces:

- Mild detergent
- Water

When cleaning the QIAreach eHub surface:

- Wear laboratory gloves, coat, and protective glasses.
- Wet a paper towel in mild detergent and wipe down the QIAreach eHub surface and the surrounding workbench area. Take care not to intentionally wet the eStick connection ports or ON/OFF button and USB port.
- Dry the QIAreach eHub surface with a fresh paper towel.



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# 8 Troubleshooting

## 8.1 General information

This section provides information on some issues that may occur with the QIAreach eHub along with possible causes and solutions. Specific information may vary with QIAreach tests. For troubleshooting relevant to a particular QIAreach test, see the applicable kit's Instructions for Use.

## 8.2 Contacting QIAGEN Technical Services

When contacting QIAGEN Technical Services about an error with the QIAreach eHub, note the steps leading up to the error. This information will help QIAGEN Technical Services solve the problem.

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

- QIAreach eHub serial number
- Test type and test kit lot number
- Error code (if applicable)
- Timepoint when the error occurred for the first time
- Frequency of error occurrence (i.e., intermittent or persistent error)
- Photo of error, if possible

Note: Information about the latest software can be found at [www.qiagen.com](http://www.qiagen.com). In some cases, updates may be available for addressing specific problems. For assistance, visit [www.qiagen.com/support](http://www.qiagen.com/support).

## 8.3 QIAreach eHub error codes

If the QIAreach eHub displays an error code, refer to the tables below for specific error descriptions and solutions.

**Table 2. QIAreach eHub error codes categories – general description**

| Error type              | Error code format | Description  |
|-------------------------|-------------------|--|
| Self-Test               | A-[Error code]    | eStick electronic failure                                    |
| Algorithm               | B-[Error code]    | Run error or user workflow error                             |
| Communication/<br>Other | C-[Error code]    | Invalid data or missed communication between eStick and eHub |

**Table 3. "A" error codes**

| Error code | Description         | Recommended action  |
|------------|---------------------|---|
| A-1        | Used eStick         | Discard and use new eStick.   |
| A-2        | Metadata error      | Discard and use new eStick.   |
| A-4        | Metadata error      | Discard and use new eStick.   |
| A-8        | Voltage Failure     | Remove and re-insert the eStick. If error persists, discard and use new eStick. |
| A-16       | Voltage Failure     | Remove and re-insert the eStick. If error persists, discard and use new eStick. |
| A-32       | Voltage Failure     | Remove and re-insert the eStick. If error persists, discard and use new eStick. |
| A-64       | Voltage Failure     | Remove and re-insert the eStick. If error persists, discard and use new eStick. |
| A-128      | Frequency Failure   | Remove and re-insert the eStick. If error persists, discard and use new eStick. |
| A-256      | Frequency Failure   | Remove and re-insert the eStick. If error persists, discard and use new eStick. |
| A-512      | Frequency Failure   | Remove and re-insert the eStick. If error persists, discard and use new eStick. |
| A-1024     | Frequency Failure   | Remove and re-insert the eStick. If error persists, discard and use new eStick. |
| A-2048     | LED Current Failure | Remove and re-insert the eStick. If error persists, discard and use new eStick. |

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**Table 3. "A" error codes (cont'd)**

| Error code | Description            | Recommended action  |
|------------|------------------------|---|
| A-4096     | LED Current Failure    | Remove and re-insert the eStick. If error persists, discard and use new eStick. |
| A-8192     | LED Current Failure    | Remove and re-insert the eStick. If error persists, discard and use new eStick. |
| A-16384    | LED Current Failure    | Remove and re-insert the eStick. If error persists, discard and use new eStick. |
| A-32768    | Dark Frequency Failure | Remove and re-insert the eStick. If error persists, discard and use new eStick. |
| A-65535    | Unknown value          | Remove and re-insert the eStick. If error persists, discard and use new eStick. |

**Table 4. "B" error codes**

| Error code | Description              | Recommended action   |
|------------|--------------------------|--|
| B-0        | No result                | Discard and use new eStick.  |
| B-8        | Conjugate Wave Too Early | Ensure eStick is inserted prior to adding sample. Discard and use new eStick.  |
| B-9        | Conjugate Wave Too Early | Check sample color and/or viscosity*. Discard and use new eStick.  |
| B-10       | High Dark Frequency      | Ensure test is run out of sunlight. Discard and use new eStick.  |
| B-12       | No Frequency             | Discard and use new eStick.  |
| B-13       | No Frequency             | Discard and use new eStick.  |
| B-14       | Sample not detected      | Check sample color and/or viscosity*. Run test within 60 minutes of removing eStick from foil. Discard and use new eStick. |
| B-15       | Frequency Out of Range   | Discard and use new eStick.  |
| B-16       | Low Frequency            | Ensure sample is mixed in processing tube prior to adding test sample. Discard and use new eStick.                         |
| B-17       | High Frequency           | Discard and use new eStick.  |
| B-18       | Frequency Out of Range   | Discard and use new eStick.  |
| B-19       | Low Frequency            | Ensure sample is mixed in processing tube prior to adding test sample. Discard and use new eStick.                         |
| B-21       | Peak Data Failure        | Check sample color and/or viscosity*. Discard and use new eStick.  |
| B-22       | Result Timeout           | Discard and use new eStick.  |
| B-23       | Baseline Issue           | Discard and use new eStick.  |
| B-24       | Baseline Issue           | Discard and use new eStick.  |
| B-25       | Signal Noise             | Discard and use new eStick.  |
| B-255      | Test Removed Early       | Wait for test completion before removing eStick. Discard and use new eStick.   |

\* See Troubleshooting Guide section of applicable kit Instructions for Use for further instructions.

**Table 5. "C" error codes**

| Error code | Description                    | Recommended action   |
|------------|--------------------------------|--|
| C-0        | Connection Error               | Remove and re-insert the eStick. If error persists, discard and use new eStick.  |
| C-1        | Expired eStick                 | Test is past expiry date. Use an eStick within expiration.   |
| C-2        | Sample Not Detected            | Run test within 60 minutes of removing eStick from foil. Discard and use new eStick.   |
| C-3        | Start Not Acknowledged         | Remove and re-insert the eStick. If error persists, discard and use new eStick. If error persists with new eStick, discontinue use of eHub port. |
| C-4        | Self Test Failure              | Remove and re-insert the eStick. If error persists, discard and use new eStick. If error persists with new eStick, discontinue use of eHub port. |
| C-5        | Metadata Failure               | Remove and re-insert the eStick. If error persists, discard and use new eStick. If error persists with new eStick, discontinue use of eHub port. |
| C-6        | Measurement Data Failure       | Remove and re-insert the eStick. If error persists, discard and use new eStick. If error persists with new eStick, discontinue use of eHub port. |
| C-7        | Measurement Data Failure       | Remove and re-insert the eStick. If error persists, discard and use new eStick. If error persists with new eStick, discontinue use of eHub port. |
| C-8        | Command Initialization Failure | Remove and re-insert the eStick. If error persists, discard and use new eStick. If error persists with new eStick, discontinue use of eHub port. |
| C-9        | Algorithm Failure              | Remove and re-insert the eStick. If error persists, discard and use new eStick. If error persists with new eStick, discontinue use of eHub port. |

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**Table 5. "C" error codes (cont'd)**

| Error code | Description            | Recommended action   |
|------------|------------------------|--|
| C-10       | Unexpected Result Time | Remove and re-insert the eStick. If error persists, discard and use new eStick. If error persists with new eStick, discontinue use of eHub port. |
| C-11       | eStick Timeout         | Run test within 60 minutes of removing eStick from foil. Discard and use new eStick.   |
| C-12       | Test Removed Too Early | Wait for test completion before removing eStick. Discard and use new eStick.   |
| C-13       | Connection Error       | Remove and re-insert the eStick. If error persists, discard and use new eStick. If error persists with new eStick, discontinue use of eHub port. |
| C-14       | eHub Low Battery       | Charge eHub or connect to main power prior to repeating test. Remove and re-insert the eStick. If error persists, discard and use new eStick.    |
| C-15       | eHub Internal Error    | The eHub can no longer be used. Contact QIAGEN Customer Support.   |
| C-16       | eHub RTC Failure       | The eHub can no longer be used. Contact QIAGEN Customer Support.   |

## 9 Technical Specifications

### Dimensions and weight

|            |  |
|------------|--|
| Dimensions | Width: 304 x 112 x 51 mm (12 x 4.4 x 2 in) |
| Weight     | 1000 g (2.2 lb)                            |

### Power requirements

|                                      |                                       |
|--------------------------------------|---------------------------------------|
| EU and Interchangeable AC input plug | USB Charger Power Adapters (supplied) |
| Voltage                              | 100–240 VAC                           |
| Power                                | 0.4A max                              |
| Frequency                            | 50–60 Hz                              |
| Line regulation                      | ± 1%                                  |
| Load regulation                      | ± 5%                                  |
| Line Frequency Variation             | ± 3 Hz                                |

#### QIAreach eHub device:

|         |       |
|---------|-------|
| Voltage | 5V DC |
| Power   | 1.0A  |

#### Internal Li-Ion battery (non-user-serviceable):

- Voltage: 3.7V nominal
- Capacity: 3350 mAh nominal

### Operating conditions

|                    |                         |
|--------------------|-------------------------|
| Air Temperature    | 15–30°C (59–86°F)       |
| Relative Humidity  | 30–65% (non-condensing) |
| Place of Operation | For Indoor use only     |

### Transport conditions

|                   |   |
|-------------------|---|
| Air Temperature   | –20 to 60°C (–4 to 140°F)                     |
| Relative Humidity | Maximum 70% relative humidity, non-condensing |

### Storage conditions

|                   |                         |
|-------------------|-------------------------|
| Air Temperature   | 15–30°C (59–86°F)       |
| Relative Humidity | 30–65% (non-condensing) |

### RoHS (Responsibility of Health and Safety) Compliance:

- Compliant with RoHS 10 EU Directive 2015/863: Restriction of the Use of certain Hazardous Substances in electrical and electronic equipment

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### **Electromagnetic compatibility (EMC)**

- Compliant with IEC 61326-1: Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements
- Meets the requirements of CISPR 11:2015: ISM Equipment Radiated RF Emissions as a Group 1, Class A device
- Meets the requirements of FCC Title 47 CFR Part 15 Subpart B– unintentional radiators as a Class A device

### **Electrical Safety**

- Compliant with IEC 61010-1: Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements



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# 10 Appendix A – Technical Data

## 10.1 FCC Compliance: Supplier's Declaration of Conformity

### **47 CFR § 2.1077 Compliance Information**

Unique Identifier: 9002969 – QIAGEN QIAreach eHub

### **Responsible Party – U.S. Contact Information**

QIAGEN Inc. - USA

19300 Germantown Road

Germantown, MD 20874

Telephone: (800-362-7737)

Email: [customercare-us@qiagen.com](mailto:customercare-us@qiagen.com)

### **FCC Compliance Statement**

This product has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this product in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- 1) This device may not cause harmful interference.
- 2) This device must accept any interference received, including interference that may cause undesired operation.

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Notice: The FCC regulations provide that changes or modifications not expressly approved by QIAGEN, Inc. could void your authority to operate this equipment.

These limits are designed to provide reasonable protection against harmful interference in a non-residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference with radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the antenna of the radio/television receiver.
- Increase the separation between this equipment and the radio/television receiver.
- Plug the equipment into a different outlet so that the equipment and the radio/television receiver are on different power mains branch circuits.
- Consult a representative of QIAGEN or an experienced radio/television technician for additional suggestions.

In order to maintain compliance with FCC regulations, this equipment must be used with the supplied USB cable and USB Charger. Operation with non-approved equipment or alternate cables may result in interference to radio and TV reception.

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## 10.2 Waste Electrical and Electronic Equipment (WEEE)

This section provides information about disposal of waste electrical and electronic equipment by users.

The crossed-out wheeled bin symbol (see below) indicates that this product must not be disposed of with other waste; it must be taken to an approved treatment facility or to a designated collection point for recycling, according to local laws and regulations.

The separate collection and recycling of waste electronic equipment at the time of disposal helps to conserve natural resources and ensures that the product is recycled in a manner that protects human health and the environment.



Recycling can be provided by QIAGEN upon request at additional cost. In the European Union, in accordance with the specific WEEE recycling requirements and where a replacement product is being supplied by QIAGEN, free recycling of its WEEE-marked electronic equipment is provided.

To recycle electronic equipment, contact your local QIAGEN sales office for the required return form. Once the form is submitted, you will be contacted by QIAGEN either to request follow-up information for scheduling collection of the electronic waste or to provide you with an individual quote.

## 10.3 Disclaimer of warranties

EXCEPT AS PROVIDED IN QIAGEN TERMS AND CONDITIONS OF SALE FOR THE QIAREACH EHUB, QIAGEN ASSUMES NO LIABILITY WHATSOEVER AND DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY RELATING TO THE USE OF THE QIAREACH EHUB INCLUDING LIABILITY OR WARRANTIES RELATING TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT, OR OTHER INTELLECTUAL PROPERTY RIGHT ANYWHERE IN THE WORLD.

## 11 Ordering Information

| <b>Product</b> | <b>Contents</b>   | <b>Cat. no.</b> |
|----------------|---|-----------------|
| QIAreach eHub  | Includes 1 QIAreach eHub; 1 USB drive containing the QIAreach software; 1 USB charging cable; 1 power adapter; 1 QIAreach eHub dust cover | 9002969         |

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at [www.qiagen.com](http://www.qiagen.com) or can be requested from QIAGEN Technical Services or your local distributor.

## 12 Document Revision History

| Date             | Changes  |
|------------------|--|
| R1, June 2020    | Initial release  |
| R2, October 2020 | Product brand name change to QIAreach eHub<br>Added the IVD symbol on the cover page<br>Updated the Symbols section to add the RoHS, UL, and Biohazard symbols<br>Added the Biohazard warning in the Biological Safety section<br>Updated the Unpacking and installing the QIAreach eHub section to add information about the Battery LED indicators on the eHub<br>Updated the QIAreach eHub error codes section<br>Updated the Voltage requirement in the Technical Specifications section |
| R3, June 2021    | Brand update from QIAreach™ to QIAreach®<br>Updated QIAreach eHub and delivery components section to revise photo and description of USB Charger Power Adapter component<br>Updated Troubleshooting Information to add contact information<br>Revised Table 4 of QIAreach eHub error codes section<br>Updated Technical Specifications section to revise Power requirements and Transport conditions information   |

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**Limited License Agreement for QIAreach® eHub**

Use of this product signifies the agreement of any purchaser or user of the product to the following terms:

1. The product may be used solely in accordance with the protocols provided with the product and this handbook and for use with components contained in the kit only. QIAGEN grants no license under any of its intellectual property to use or incorporate the enclosed components of this kit with any components not included within this kit except as described in the protocols provided with the product, this handbook, and additional protocols available at [www.qiagen.com](http://www.qiagen.com). Some of these additional protocols have been provided by QIAGEN users for QIAGEN users. These protocols have not been thoroughly tested or optimized by QIAGEN. QIAGEN neither guarantees them nor warrants that they do not infringe the rights of third-parties.
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