Publication information

Edition notice
This publication is intended for operators of the cobas® Liat® System.

The contents of this document, including all graphics and photographs, are the property of Roche. No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the express written permission of Roche.

Every effort has been made to ensure that the information is correct at the time of publishing. Not all functionality described in this manual may be available to all users. Roche Diagnostics reserves the right to change this publication as necessary and without notice as part of ongoing product development. Such changes may not immediately be reflected in this document.

Screenshots
Any screenshots in this publication are added exclusively for the purpose of illustration. Configurable and variable data such as parameters, results, path names etc. visible therein must not be used for laboratory purposes.

Intended use
This document is intended for the US market only.
Caution: Federal law restricts this device to sale by or on the order of a physician.

Copyright
©2017-2018, Roche Diagnostics. All right reserved.

Trademarks
The following trademarks are acknowledged.

COBAS, LIAT and LIFE NEEDS ANSWERS are trademarks of Roche.

All other product names and trademarks are the property of their respective owners.

Feedback
This document was created by Roche Diagnostics GmbH (operator manual content) and the Roche Diagnostics Engineering Operations department (US Supplement). Direct questions or concerns regarding the contents of this document to:

Roche Diagnostics Corporation
Engineering Operations Department
9115 Hague Road
P.O. Box 50457
Indianapolis, IN 46250-0457
USA

Document availability
This document is available on the Roche Diagnostics USA website at https://usdiagnostics.roche.com.
Warranty for the instrument

Roche warrants the instrument against defects in materials and workmanship (except for consumable items and lamps) for a period of one year (90 days in the case of parts in direct contact with reagents). Roche, at its option, either replaces or repairs free of charge, on an f.o.b. Indianapolis, Indiana basis, all instruments and parts which prove to be defective and are subject to such warranty.

Field-installed options, modifications, and used equipment carry a ninety (90) day parts and labor warranty. Any component part(s) and labor necessary to complete a repair are guaranteed for thirty (30) days. Some replacement components, such as printers, monitors, etc., may carry a longer warranty.

This warranty does not apply to instruments not installed by a Roche Field Service Representative/Field Application Specialist (or authorized agent of Roche) and/or not used according to instructions or damaged by accident, alteration, misuse, tampering, and/or abuse.

We warrant that the services provided under a Roche Warranty or Service Agreement are free from defects in workmanship for a period of thirty (30) days from the date of service.

Warranty for the reagent

Roche warrants that this product will meet the specifications stated in the labeling when used in accordance with such labeling and will be free from defects in material and workmanship until the expiration date printed on the label.

WE HEREBY DISCLAIM ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE EQUIPMENT, REAGENTS AND SERVICES PROVIDED, EXCEPT THE LIMITED WARRANTY SET FORTH ABOVE. WE ARE NOT LIABLE FOR ANY INCIDENTAL, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO, LOST PROFITS OR REVENUES, LOSS OF THE USE OF THE CAPITAL, COST OF SUBSTITUTE EQUIPMENT, REAGENTS, FACILITIES OR SERVICES AND/OR DOWN-TIME COSTS RESULTING FROM OR ARISING IN CONNECTION WITH THE PERFORMANCE, DELAY IN PERFORMANCE OR NONPERFORMANCE OF ANY TERM OR CONDITION OF A ROCHE WARRANTY OR SERVICE AGREEMENT OR FROM THE USE OR MISUSE OF THE INSTRUMENT (OR ANY SUBSTITUTE THEREFORE) OR REAGENTS OR ANY MATERIALS OR WORKMANSHIP DELIVERED HEREUNDER, EVEN IF WE HAVE BEEN ADVISED, KNEW OR SHOULD HAVE KNOWN OF THE POSSIBILITY OF SUCH DAMAGES. YOUR EXCLUSIVE REMEDY WITH RESPECT TO OUR WARRANTY OF ANY EQUIPMENT, REAGENTS OR PARTS SHALL BE REPAIR OR REPLACEMENT OF THE DEFECTIVE ITEM(S), AT OUR OPTION. AS YOUR EXCLUSIVE REMEDY FOR ANY SERVICE PERFORMED UNDER THIS LIMITED WARRANTY WE SHALL RE-PERFORM ANY SERVICE WHICH WAS DEFECTIVE.
Contact Support and/or Service Representatives

Roche provides 24 hour-a-day, 365 day-a-year telephone assistance. In addition, on-site service is provided in a timely manner. In order for us to comply with federal record keeping requirements, if you need to contact your Roche Diagnostics service representative, call the appropriate Customer Support Center number listed below. They, in turn, notify your representative to contact you.

cobas Liat System 1-800-800-5973

The Customer Support Center answers all calls pertaining to Roche products. If the Customer Support Center cannot resolve a problem by phone, a Roche representative is dispatched.

Service policy questions Questions relating to your service policy can be referred to your local Roche representative or the regional service manager by calling the appropriate Customer Support Center number.

Customer Training

Roche Diagnostics conducts Indianapolis-based operator training courses and/or field-based training depending upon the instrument or system you purchased. Please contact your Roche Diagnostics representative for course availability and scheduling.

Ordering Information

Order replacement parts, consumable materials, reagents, standards, calibrators and controls as necessary from Roche. Please use the catalog number and reference name for each item when placing an order with Roche Customer and Business Support Center.

Roche Customer and Business Support Center number 1-800-428-5030

Contacting Sales Representatives

If you wish to contact your sales representative, he or she may be reached by calling Customer and Business Support Center or by leaving a message on their voice mail.

Roche Customer and Business Support Center number 1-800-428-5076

Voice mail 1-800-845-7355

Entering the appropriate mailbox number or press # to spell the name.
Customer Communications

As the need arises, you shall receive various customer communications concerning information about your system. These updates are usually in one of the following forms.

Customer communications can also be viewed on the internet. Some documentation is available online only. Go to https://usdiagnostics.roche.com and select Documentation.

**Bulletins**

Bulletins (Reagent, Software, or Analyzer) are printed on Roche Diagnostics letterhead. Bulletins contain information that is vital to the performance of your system. Bulletin information should be communicated internally to all analyzer operators. Bulletins should be kept on file until the reagent expires, you receive updated labeling or you are notified by Roche Diagnostics to discard them.

**Urgent Medical Device Correction or Removal**

Urgent Medical Device Correction or Removal is printed on Roche Diagnostics letterhead with the words *Urgent Medical Device Correction* or *Urgent Medical Device Removal*. These require immediate attention by the analyzer operator and are to be filed for reference until further notice.

**Customer Letters**

Customer Letters are printed on Roche letterhead and contain general information or attachments that you may place in your files. You may discard Customer Letters after reading and following any applicable instructions contained in them.

**Product Announcement**

Product Announcements are usually announcing product launches. They contain specific details about a new product such as features and benefits, kit configuration and pricing. Product Announcements may or may not be discarded depending on your laboratory’s preference.

CLIA/CLSI Compliance

Roche documentation, which includes this operator’s manual, methods sheets and active customer bulletins, conforms with the guidelines in effect at the time of publication listed in the Code of Federal Regulations (CFR) and the Clinical Laboratory Standards Institute (CLSI) General Laboratory Practices and Safety Guidelines. Documentation also meets the Centers for Medicare and Medicaid Services, formerly known as Health Care Financing Administration, interpretation of the requirements for the Clinical Laboratory Improvement Amendments (CLIA ’88).
Contacting Commercial Education

The documentation you receive to operate your system, prepare and/or utilize reagents, is created by several departments within Roche. The Commercial Education department produces most of the training documentation you receive here in Indianapolis, or at your on-site training.

To contact Commercial Education

- send an email to Indianapolis.TechPub@roche.com

Provide your name and account number when contacting us. We will get back to you, or fill your request, as soon as possible.

If you have any questions on documentation that is not of a training nature, contact the appropriate Customer Support Center as designated in the Contact Support and/or Service Representative section.

To Change Mailing Addresses or Contact Names

There are several ways to change your mailing address or the contact name for your account. You may send an email, leave a message or go to https://usdiagnostics.roche.com

Please provide your name and account number when contacting us. Your account number is provided to you by a Roche representative when your analyzer is installed.

Email

indianapolis.marcom-tech_pubs@roche.com

https://usdiagnostics.roche.com Contact > Contact Change Form.
Publication information

<table>
<thead>
<tr>
<th>Publication version</th>
<th>Software version</th>
<th>Revision date</th>
<th>Change description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>2.0</td>
<td>March 2015</td>
<td>Clerical updates, text revisions.</td>
</tr>
<tr>
<td>5.0</td>
<td>2.1</td>
<td>December 2015</td>
<td>First publication in Roche user documentation format.</td>
</tr>
<tr>
<td>7.0</td>
<td>3.0</td>
<td>May 2016</td>
<td>List images updated.</td>
</tr>
</tbody>
</table>

Revision history
Edition notice

This publication is intended for operators of the cobas® Liat® Analyzer.

Every effort has been made to ensure that all the information contained in this publication is correct at the time of publishing. However, the manufacturer of this product may need to update the publication information as output of product surveillance activities, leading to a new version of this publication.

Where to find information

The cobas® Liat® System Operator's Manual contains all information about the product, including the following:

- Safety
- Installation
- Routine operation
- Maintenance and calibration
- Troubleshooting information
- Configuration information
- Background information

The cobas® Liat® Analyzer Quick Start Guide is intended as a reference during the cobas® Liat® Analyzer setup.

The cobas® Liat® Cleaning Tool Guide is intended as an instruction for using the cobas® Liat® Cleaning Tool with the cobas® Liat® Analyzer.

The cobas® Liat® Advanced Tools Key Guide is intended as an instruction for performing various functions, including backing up data and syncing assay lots between cobas® Liat® Analyzers.

The cobas® Liat® Analyzer Host Interface Manual POCT1-A (EDI) contains all necessary information about the EDI interface.

The cobas® Liat® Analyzer Host Interface Manual POCT1-A (DML) contains all necessary information about the DML interface.

⚠️ General attention

To avoid incorrect results, ensure that you are familiar with the instructions and safety information.

- Pay particular attention to all safety notices.
- Always follow the instructions in this publication.
- Do not use the software in a way that is not described in this publication.
- Store all publications in a safe and easily retrievable place.
Screenshots
The screenshots in this publication have been added exclusively for illustration purposes. Configurable and variable data, such as tests, results, or path names visible therein must not be used for laboratory purposes.

Warranty
Any customer modification to the analyzer and the use of unauthorized assay tubes or accessories renders the warranty null and void.

Do not open the cobas® Liat® Analyzer, change a component, or install unauthorized software.

Copyright

Trademarks
The following trademarks are acknowledged:

COBAS and LIAT are trademarks of Roche.

All other product names and trademarks are the property of their respective owners.

Patents
See http://www.roche-diagnostics.us/patents

Support
If you have any further questions, contact your Roche representative with the system information collected as described in the Troubleshooting chapter in the cobas® Liat® System Operator's Manual.

Approvals
The cobas® Liat® Analyzer meets the requirements laid down in:


Compliance with the applicable directive(s) is provided by means of the Declaration of Conformity.

The following marks demonstrate compliance:

IVD

IN VITRO DIAGNOSTIC MEDICAL DEVICE

Complies with the provisions of the applicable EU directives.
Issued by TÜV Rheinland for Canada and the US.

Equipment de Laboratoire / Laboratory Equipment

‘Laboratory Equipment’ is the product identifier as shown on the type plate.

Feedback

Every effort has been made to ensure that this publication fulfills the intended use. All feedback on any aspect of this publication is welcome and is considered during updates. Contact your local Roche representative, should you have any such feedback.

In the U.S., call the following number: 1-800-800-5973.

Contact addresses

Roche Molecular Systems, Inc.
1080 US Highway 202 South
Branchburg, NJ 08876
USA
Made in Switzerland

Roche Diagnostics GmbH
Sandhofer Strasse 116
68305 Mannheim
Germany
# Table of contents

Publication information 3  
Contact addresses 6  
Table of contents 7  
Intended use 9  
Symbols and abbreviations 9  
What is new in publication version 8.0 11  
What is new in publication version 7.2 13  

## Safety

1 General safety information  
   Safety instructions 21  

## Operation

2 Installation  
   Installing the analyzer 29  

3 About the analyzer  
   About the analyzer functions 37  
   Overview of the analyzer operating elements 40  
   About assays 42  
   Overview of the touch screen 43  

4 Common user actions  
   Starting the analyzer 47  
   Logging on 48  
   Changing your password 50  
   Assigning or changing your badge barcode 53  
   Selecting items on the screen 54  
   Selecting predefined values 55  
   Entering text and numbers 56  
   Scanning barcodes 57  
   Locking the analyzer 59  
   Unlocking the analyzer 61  
   Switching off the analyzer 63  

5 Performing a run  
   Safety 67  
   Running an assay 68  
   Aborting an assay run 72  
   Result handling 74  

6 Set-up  
   About setting up the analyzer 87  
   Defining values 90  
   Installing and updating assays 90  
   Viewing and printing assay tube lot information 105  
   Defining system settings 107  
   Network definitions 113  
   Network resources 114  
   Connections to a host system 117  
   Managing users 122  
   Updating the software 129  
   Registering the software 132  
   Viewing software and hardware information 134  

7 Maintenance  
   Quality control 139  
   Maintenance and calibration 140  

8 Troubleshooting  
   About troubleshooting 149  
   List of error messages 150  
   Generating a backup for troubleshooting purposes 168  
   Viewing and printing the event log 169  
   Resetting the lost default administrator password 170  
   Cleaning the window of the barcode reader 172  
   Resolving a tube entry door error before the start of a run 173  
   Resending results manually 174  
   Restarting an unresponsive analyzer 175  

9 Specifications  
   Technical data 179  

## Appendix

Index 185
Intended use

The cobas® Liat® Analyzer is an automated nucleic acid test instrument, that when used together with cobas® Liat® assay tubes to perform *in vitro* diagnostic tests, is referred to as the cobas® Liat® System. In conjunction with a cobas® Liat® assay tube, the instrument performs reagent preparation, target enrichment, inhibitor removal, nucleic acid extraction, polymerase chain reaction (PCR) amplification, real-time detection, and result interpretation to automate the detection or quantification of nucleic acid targets in a biological sample.

Symbols and abbreviations

Product names

Except where the context clearly indicated otherwise, the following product names and descriptors are used.

<table>
<thead>
<tr>
<th>Product name</th>
<th>Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>cobas® Liat® System</td>
<td>system</td>
</tr>
<tr>
<td>cobas® Liat® Analyzer</td>
<td>analyzer</td>
</tr>
<tr>
<td>cobas® Liat® Assay Tube</td>
<td>assay tube</td>
</tr>
<tr>
<td>cobas® Liat® Cleaning Tool</td>
<td>cleaning tool</td>
</tr>
<tr>
<td>cobas® Liat® Advanced Tools Key</td>
<td>advanced tools key</td>
</tr>
<tr>
<td>cobas® Liat® Quality Control Kit</td>
<td>quality control kit</td>
</tr>
</tbody>
</table>

Symbols used in the publication

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>•</td>
<td>List item</td>
</tr>
<tr>
<td>☀️</td>
<td>Related topics containing further information</td>
</tr>
<tr>
<td>🌟</td>
<td>Tip. Extra information on correct use or useful hints.</td>
</tr>
<tr>
<td>▶️</td>
<td>Start of a task</td>
</tr>
<tr>
<td>🕪️</td>
<td>Extra information within a task</td>
</tr>
<tr>
<td>➡️</td>
<td>Result of an action within a task</td>
</tr>
<tr>
<td>♻️</td>
<td>Frequency of a task</td>
</tr>
<tr>
<td>☕️</td>
<td>Duration of a task</td>
</tr>
<tr>
<td>🛠️</td>
<td>Materials that are required for a task</td>
</tr>
<tr>
<td>🡲</td>
<td>Prerequisites of a task</td>
</tr>
<tr>
<td>☇️</td>
<td>Topic. Used in cross-references to topics.</td>
</tr>
<tr>
<td>▶️</td>
<td>Task. Used in cross-references to tasks.</td>
</tr>
<tr>
<td>📈</td>
<td>Figure. Used in figure titles and cross-references to figures.</td>
</tr>
</tbody>
</table>

Symbols used in the publication
Symbols used on product

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Symbol]</td>
<td>Table. Used in table titles and cross-references to tables.</td>
</tr>
<tr>
<td>![Symbol]</td>
<td>Equation. Used in cross-references to equations.</td>
</tr>
<tr>
<td>![Symbol]</td>
<td>Code example. Used in code titles and cross-references to codes.</td>
</tr>
</tbody>
</table>

Symbols used in the publication

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>GTIN</td>
<td>Global Trade Item Number.</td>
</tr>
<tr>
<td>%</td>
<td>Humidity limits.</td>
</tr>
<tr>
<td>![Symbol]</td>
<td>Keep upright.</td>
</tr>
<tr>
<td>![Symbol]</td>
<td>Fragile handle with care.</td>
</tr>
<tr>
<td>![Symbol]</td>
<td>Keep dry.</td>
</tr>
<tr>
<td>![Symbol]</td>
<td>Keep away from sunlight.</td>
</tr>
<tr>
<td>![Symbol]</td>
<td>Stacking limit by mass.</td>
</tr>
<tr>
<td>![Symbol]</td>
<td>Stacking limit by number.</td>
</tr>
<tr>
<td>![Symbol]</td>
<td>Recyclable.</td>
</tr>
<tr>
<td>![Symbol]</td>
<td>Consult operating instructions.</td>
</tr>
</tbody>
</table>

Abbreviations

The following abbreviations are used.

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AD</td>
<td>Amplification and detection</td>
</tr>
<tr>
<td>ANSI</td>
<td>American National Standards Institute</td>
</tr>
<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
</tr>
<tr>
<td>CISPR</td>
<td>Comité International Spécial des Perturbations Radiélectriques (International Special Committee on Radio Interference)</td>
</tr>
</tbody>
</table>

Abbreviations
What is new in publication version 8.0

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSA</td>
<td>Canadian Standards Association</td>
</tr>
<tr>
<td>DML</td>
<td>Device messaging layer</td>
</tr>
<tr>
<td>DMS</td>
<td>Data management system</td>
</tr>
<tr>
<td>EC</td>
<td>European Community</td>
</tr>
<tr>
<td>EN</td>
<td>European standard</td>
</tr>
<tr>
<td>FTP</td>
<td>File transfer protocol</td>
</tr>
<tr>
<td>HIS</td>
<td>Hospital information system</td>
</tr>
<tr>
<td>HL7</td>
<td>Health Level Seven</td>
</tr>
<tr>
<td>IEC</td>
<td>International Electrical Commission</td>
</tr>
<tr>
<td>IP</td>
<td>Internet protocol</td>
</tr>
<tr>
<td>IVD</td>
<td>In vitro diagnostic</td>
</tr>
<tr>
<td>LAN</td>
<td>Local area network</td>
</tr>
<tr>
<td>LIS</td>
<td>Laboratory information system</td>
</tr>
<tr>
<td>n/a</td>
<td>not applicable</td>
</tr>
<tr>
<td>NA</td>
<td>Not available</td>
</tr>
<tr>
<td>NAT</td>
<td>Nucleic acid test</td>
</tr>
<tr>
<td>PCR</td>
<td>Polymerase chain reaction</td>
</tr>
<tr>
<td>POCT</td>
<td>Point of Care testing</td>
</tr>
<tr>
<td>RF</td>
<td>Radio frequency</td>
</tr>
<tr>
<td>QC</td>
<td>Quality control</td>
</tr>
<tr>
<td>SD</td>
<td>Standard deviation</td>
</tr>
<tr>
<td>SL</td>
<td>Shared lot</td>
</tr>
<tr>
<td>SNTP</td>
<td>Simple network time protocol</td>
</tr>
<tr>
<td>UPS</td>
<td>Uninterruptible power supply</td>
</tr>
<tr>
<td>URI</td>
<td>Uniform resource identifier</td>
</tr>
<tr>
<td>USS</td>
<td>Uniform Symbology Specification</td>
</tr>
<tr>
<td>UTC</td>
<td>Coordinated Universal Time</td>
</tr>
<tr>
<td>WEEE</td>
<td>Waste Electrical and Electronic Equipment</td>
</tr>
<tr>
<td>WLAN</td>
<td>Wireless LAN</td>
</tr>
<tr>
<td>WPA2</td>
<td>Wireless protected access 2</td>
</tr>
</tbody>
</table>

Abbreviations

Safety instructions
The safety instructions were updated. A reference to local regulations was added to disposal statements.
• Safety instructions (21)

Software-related actions
Information was added that software-related actions are still possible even if a hardware-related issue occurs during initialization of the analyzer.
• Self-checks (38)
Locking and unlocking the analyzer
The information regarding locking and unlocking the analyzer was restructured. A safety instruction was added to set a short auto-lock time.

- Locking the analyzer (59)
- Unlocking the analyzer (61)

Barcode settings
The analyzer supports additional barcode standards. The supported subtypes for the GS1-DataBar barcode standard were added. Restrictions for the start character of the Code 128 barcode standard were added. All barcode standards except Code 128 can be configured.

- Scanning barcodes (57)
- Configuring barcode settings (110)
- Technical characteristics (179)

Reviewing results
The task to review results was updated. Sorting and filtering results was updated and moved to a separate task. The symbols representing the result status were updated.

- Reviewing results (76)
- Sorting and filtering results (80)

Exporting and deleting results
The procedure to export and delete results was updated according to the changes in the procedure to filter results.

- Exporting and deleting results (82)

Installing assays
The information regarding installing and updating assays was restructured.

- Installing and updating assays (90)

Scanning of activation codes
It is now possible to scan activation codes.

- Registering assays (96)
- Registering the software (132)

System settings
Settings for time zone and barcode settings were added to the system settings. Changing the time zone requires a reboot of the analyzer. The description of the analyzer behavior if tilt sensing is enabled was updated. The maximum value for the auto-lock time was increased to 1440 minutes.

- System settings (108)

Network resources
When defining network resources, a Help button for additional information and a Test button to test the connection are now available.

- Defining network resources (114)
Connection interval
Tip added to keep the connection interval with a DMS as short as possible.

- Defining settings for host systems (117)

Changing passwords
The workflows to change passwords were aligned. New passwords must always be entered twice.

- Changing your password (50)
- Defining new users (123)
- Changing user information (126)

Software updates
Information that only applied to the update to software version 3.1 (migration of user information) was deleted.

- Updating the software (129)

List of error messages
New and updated messages were added to the list of error messages.

- List of error messages (150)

Event log
It is now possible to scroll through the event log by page.

- Viewing and printing the event log (169)

Screenshots
Screenshots were updated to reflect the changes with software version 3.2.

What is new in publication version 7.2

Printing
The procedure how to install a USB printer was extended. A procedure how to install a network printer was added. Information about color printing was added.

- Installing the analyzer (29)
- System settings (108)

Audit trail
Information about the audit trail feature was added.

- About the audit trail (38)

Logon procedures
The procedure how to log on was reworked to cover the different authentication modes. The procedure how to change your password was reworked. A procedure how to assign or change your badge barcode was added.

- Logging on (48)
- Changing your password (50)
- Assigning or changing your badge barcode (53)

Inspection of printed barcode labels
Recommendations for inspection of printed barcode labels were added.

- Scanning barcodes (57)
User management  
Requirements for user IDs and passwords were added. The procedures how to define a new user and how to change user information were reworked to cover the new features (e.g., locking users, assigning badge barcodes, change password at first logon).

* Managing users (122)

Reviewing results  
The procedures how to review results were reworked.

* Reviewing results (76)

Export and delete results  
The former functions for moving results and deleting results were combined to one function for exporting and deleting results. The corresponding procedures were combined and reworked.

* Exporting and deleting results (82)

Sharing assay tube lots  
Information about ways to share assay tube lots between different analyzers was added.

* Sharing assay tube lots (98)

Authentication modes  
Information about the supported authentication modes was added.

* About authentication modes (110)

DMS connectivity  
Information about the data exchange with a DMS was added. A procedure how to connect the analyzer to a DMS was added. Information how to disconnect the analyzer from a host was added.

* Connections to a host system (117)

Data migration  
Information about the impact of the software update on the user information was added.

Error codes  
The error codes were differentiated between software, hardware/firmware, and assay codes. The list of error messages was extended.

* List of error messages (150)

Troubleshooting  
Troubleshooting procedures were reworked and added.

* About troubleshooting (149)

Other environmental conditions  
Information about other environmental conditions was added.

* Other environmental conditions (180)
Caution statements  

Caution statements about the risks of power interruption, contamination of the cleaning tool, and data security were added.

- Installing the analyzer (29)
- Cleaning spillages or leakages from an assay tube (145)
- Generating a backup for troubleshooting purposes (168)

Changed user interface  

The user interface was changed with software version 3.1. Screenshots and text were updated to reflect the changes.
Safety

1 General safety information

19
General safety information
Safety instructions

Safety classification

The safety precautions and important user notes are classified according to the ANSI Z535.6-2011 standard. Familiarize yourself with the following meanings and icons:

⚠️ Safety alert symbol
- The safety alert symbol is used to alert you to potential physical injury hazards. Obey all safety messages that follow this symbol to avoid possible damage to the system, injury, or death.

These symbols and signal words are used for specific hazards:

⚠️ WARNING
Warning…
- …indicates a hazardous situation that, if not avoided, could result in death or serious injury.

⚠️ CAUTION
Caution…
- …indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

NOTICE
Notice…
- …indicates a hazardous situation that, if not avoided, may result in damage to the analyzer.

Important information that is not safety relevant is indicated with the following icon:

💡 Tip…
- …indicates additional information on correct use or useful tips.

Safety summary

To avoid serious injury, read and comply with the following safety precautions.
**WARNING**

**Insufficient knowledge and skills**

As an operator, ensure that you know the relevant safety precaution guidelines and standards and the information and procedures contained in these instructions.

- Carefully follow the procedures for operation and maintenance described in this publication.
- Leave maintenance, installation, or service that is not described in this publication to your Roche Service representative.

**WARNING**

**Infectious materials**

There is a potential risk of infection. Staff using the cobas® Liat® Analyzer to perform tests on patient samples must be aware that any object coming into contact with biological specimens is a potential source of infection.

- Use lab gloves.
- Use a new disposable pipette (provided) for each sample.
- Follow all health and safety regulations applicable to your institution.

---

### Laser transmission

<table>
<thead>
<tr>
<th>Label</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="VV-07723-01" alt="Laser transmitter cautionary labels" /></td>
<td>There is a danger of contact with laser light or severe damage to the eyes. Do not stare into the laser transmitter.</td>
</tr>
</tbody>
</table>

---

**WARNING**

**Blindness due to intense barcode reader light**

The intense light of a laser barcode reader may severely damage your eyes or result in exposure to hazardous radiation.

- Do not stare into the beam of a laser barcode reader.
- Do not remove covers from barcode readers.
- Do not perform any maintenance actions on barcode readers. If you experience problems with the barcode readers, contact your Roche representative.
- Perform only the procedures described in this publication. Performing unauthorized procedures may result in exposure to hazardous radiation.
Electromagnetic interference

**CAUTION**

Malfunction of system and incorrect results due to interfering electromagnetic fields

This system is designed and tested to CISPR 11 Class A standard. In a domestic environment it may cause radio interference, in which case, you may need to take measures to mitigate the interference.

- The electromagnetic environment should be evaluated prior to operation of the device.
- Do not operate this system in close proximity to sources of strong electromagnetic fields (for example unshielded intentional RF sources), as they may interfere with proper operations.

Class A equipment is suitable for all use in all establishments other than domestic and those directly connected to a low voltage power supply network which supplies buildings used for domestic purposes (CISPR 11, 4.2).

This instrument has been designed and tested to IEC 61326-2-6 and complies with the emission and immunity requirements.

Disposal

The analyzer must be disposed of in accordance with relevant local regulations and in coordination with your local authorities, as appropriate. The analyzer may potentially be infectious. It should therefore be decontaminated before disposal.

Safety labels on the analyzer

Safety labels are placed on the analyzer to draw your attention to areas of potential hazard.
Listed below are labels and the definitions according to the location on the analyzer.

The safety labels on the analyzer comply with the following standards: ANSI Z535, IEC 61010-1, IEC 60417, ISO 7000, or ISO 15223-1.

In addition to the safety labels on the analyzer, there are safety notes in the corresponding parts of this publication.

⚠️ For replacement labels, contact your Roche representative.

Biohazard warning
This label indicates that there are potential biohazards within the vicinity of this label. The user is responsible for cleaning the area if biohazardous material was spilled. Follow Good Laboratory Practice for working with biohazardous materials.

General warning
Potential hazards located near this label may lead to death or serious injury.

Laser transmitter
There is a danger of contact with laser light or severe damage to the eyes. Do not stare into the laser transmitter.
Operation

2 Installation................................................................................................................. 27
3 About the analyzer.................................................................................................. 35
4 Common user actions............................................................................................ 45
5 Performing a run...................................................................................................... 65
6 Set-up ....................................................................................................................... 85
7 Maintenance............................................................................................................. 137
8 Troubleshooting ..................................................................................................... 147
9 Specifications.......................................................................................................... 177
Installation

In this chapter

Installing the analyzer ........................................ 29
Installing the analyzer

Place the analyzer on a suitable level surface and connect it to the power supply. Connect it to a printer and a network, if required.

When the analyzer is starting up, a series of initialization diagnostic tests are performed automatically.

⚠️ CAUTION
Incorrect results or malfunctions due to incorrect installation
Performing installation actions other than those mentioned in this publication may lead to malfunction and incorrect results.
- Do not carry out any installation actions that are not described in this publication.

⚠️ CAUTION
Injury by tripping over cables
Cables between the analyzer and mains outlets cause a potential tripping hazard.
- Position the analyzer as close to the mains outlet as possible, taking care to ensure sufficient room for ventilation (at least 10 cm).
- Take care not to trip if you must walk behind the analyzer.

⚠️ CAUTION
Power interruption
A power failure or momentary drop in voltage may damage the system or lead to data loss.
- It is recommended to use an uninterruptible power supply (UPS).
- Ensure periodic maintenance of the UPS.

⚠️ NOTICE
Malfunction due to use of inappropriate power supply
Using an inappropriate power supply may cause malfunction.
- Only use the supplied power supply.
2 Installation

Installing the analyzer

Make sure that the package includes the following items:

- cobas® Liat® Analyzer
- Power supply
- Power cable
- Touch screen stylus
- User ID Card Kit
- Administrator password card
- cobas® Liat® Advanced Tools Key
- cobas® Liat® Cleaning Tool Kit
- cobas® Liat® Analyzer Quick Start Guide

If the packaging is damaged or an item is missing or damaged, immediately contact your Roche representative.

Retain the shipping container and packaging materials in case you have to return the analyzer to Roche for service.

- cobas® Liat® Analyzer
- Power supply
- Power cables
- Ethernet data cable, if you intend to connect the analyzer to a data network
- USB cable, if you intend to connect the analyzer to a USB printer

If the analyzer is cold due to shipping or storage, allow it to come to room temperature before opening the package and powering up to avoid possible condensation inside the analyzer.

To install the analyzer

1. Place the analyzer on a level, vibration free, and non-reflective surface, away from direct sunlight.

   - Allow at least 10 cm (4 inches) of space at the rear of the analyzer for airflow. Ensure that the vents are not blocked.
   - Allow at least 6 cm (2.5 inches) of space in front of the analyzer for easy barcode scanning.
   - Position the analyzer near a grounded mains outlet to avoid creating a trip hazard with the power cable.
2 Connect the power supply with the analyzer.
   1 Only use voltage of 100–240 V AC, 50–60 Hz.

3 Connect the power supply to a properly grounded mains outlet.

4 Press and release the power button to power on the analyzer.

5 Connect the analyzer to the local data network, if required.
   1 Use a standard Ethernet data cable and connect to an appropriate wall connector or switch.

6 Log on to the analyzer.
   1 When you use a default user account for the first time, you must change the password at logon. When you log on to the analyzer for the first time and you intend to connect a USB printer, make sure that this USB printer is not connected.

To install a USB printer

1 When you start the analyzer for the first time, make sure that the USB printer is not connected.

2 Log on to the analyzer.
   1 You need Supervisor or Administrator access role.
32 Installing the analyzer

3  Connect the printer to the analyzer.

4  Choose Main > Settings > System > Printer.

5  Choose the printer type and connection:
   - For a laser printer, choose the PCL Laser item and choose the LPT1: option.
   - For an inkjet printer, choose the PCL Inkjet item and choose the LPT1: option.

6  Choose the Select button. Choose the Printing Mode item:
   - For a grayscale printer, keep the default Grayscale option.
   - For a color printer, choose the Color option.

▷ To install a network printer

1  Connect the analyzer to the local data network.
   - Use a standard Ethernet data cable and connect to an appropriate wall connector or switch.

2  Choose Main > Settings > System > Printer.
   - You need Supervisor or Administrator access role.
3 Choose the printer type and connection:
   • For a laser printer, choose the **PCL Laser** item and choose the **NET0:** option.
   • For an inkjet printer, choose the **PCL Inkjet** item and choose the **NET0:** option.

4 Choose the **Select** button.

5 Choose the **Server Name** item, **Share Name** item, **User Name** item, and **Password** item and enter the required information.
   1 For information about the settings for the print server, contact your network administrator.

6 Choose the **Printing Mode** item:
   • For a grayscale printer, keep the default **Grayscale** option.
   • For a color printer, choose the **Color** option.

7 Return to the **Main** menu.
   1 If you do not return to the **Main** menu, settings are lost at the next restart of the analyzer.

• Related topics
   • Logging on (48)
   • Changing your password (50)
   • System settings (108)
   • Network definitions (113)
2 Installation

Installing the analyzer
About the analyzer

In this chapter

- About the analyzer functions .................................. 37
- Overview of the analyzer operating elements ............... 40
- About assays ......................................................... 42
- Overview of the touch screen ................................. 43
  Touch screen elements ........................................ 43
Table of contents
About the analyzer functions

The analyzer and the associated disposable assay tubes are for in vitro diagnostic use. The analyzer identifies and/or measures the presence of genetic material in a biological sample. The analyzer automates all nucleic acid test (NAT) processes, including reagent preparation, target enrichment, inhibitor removal, nucleic acid extraction, amplification, real-time detection, and result interpretation in a rapid manner.

Overview

The assay tube uses a flexible tube as a sample processing vessel. It contains all assay reagents pre-packed in tube segments separated by seals. Multiple sample processing actuators in the analyzer compress the assay tube to selectively release reagents, move the sample from one segment to another, and control reaction conditions. A detection module monitors the reaction in real time, while an on-board computer analyzes the collected data and outputs an interpreted result.

In a typical assay, a sample is first mixed with an internal control and then with lysis reagents. Magnetic glass particles are incubated with the lysed sample for nucleic acid enrichment, and are then captured and washed to remove possible inhibitors. Subsequently, nucleic acid is eluted from the magnetic glass particles and transferred alternately between tube segments at different temperatures for rapid PCR amplification and real-time detection.

Insert and test automation

The cobas® Liat® System automates all testing processes from sample preparation to amplification and real-time detection. By reducing complex nucleic acid testing to three simple steps, cobas® Liat® technology enables non-specialized personnel to conduct sophisticated testing.

When the sample is added to the sample segment of the assay tube, the tube is capped and remains closed for the entire test process. No further materials need to be added or removed from the tube. This approach avoids cross-contamination, reduces biohazard risks, and helps preserve sample integrity.

Rapid testing

This technology uniquely uses liquid flow and mixing to enhance reaction rates while allowing for relatively large reaction volumes. For example, the cobas® Influenza A/B Nucleic Acid Test for use on the cobas® Liat® System, using a nasopharyngeal swab sample, takes approximately 20 minutes from sample collection to result generation.
About the analyzer functions

Assay tubes can only be used once.

**NOTICE**

Damage to the analyzer due to using unauthorized assay tubes

The use of unauthorized or unapproved assay tubes or accessories may damage the analyzer. Damage caused by unauthorized tubes or accessories voids the analyzer warranty.

- Only use assay tubes listed in the standard supplies table in this publication.

**Self-checks**

When the analyzer is starting up, a series of initialization diagnostic tests are performed automatically. Furthermore, the analyzer monitors its operations during assay processing, and performs an automated calibration periodically. If an error occurs, a message is displayed on the screen and the event is logged.

If a hardware-related issue occurs during initialization, you can still perform software-related actions on the analyzer, e.g., log on and generate a diagnostic backup. However, you cannot perform hardware-related actions (e.g., run an assay or add an assay tube lot).

**Running assays**

The testing process has been condensed to a few simple steps:

- Preparing a patient sample.
- Transferring the sample into an assay tube.
- Scanning the assay tube barcode label.
- Inserting the assay tube into the analyzer.
- The analyzer automatically runs all the required assay steps and reports the test results.
- Disposing of the assay tube.
- Reviewing the result.

Before using the analyzer for the first time, make sure that it is set up correctly and the required assays are installed and activated.

**About the audit trail**

The system logs each user action that triggers a system change in an audit trail entry together with user information and time stamp (in UTC).
You can export the audit trail using the advanced tools key.

For information on exporting the audit trail, refer to the cobas® Liat® Advanced Tools Key Guide.

Related topics

- About setting up the analyzer (87)
- Installing or updating assays from a USB key (90)
- Installing or updating an assay from the Roche remote service platform (93)
- Installing an assay from a local source (95)
- Adding an assay tube lot (98)
Overview of the analyzer operating elements

A Function buttons  D Tube entry door  G Power button
B Navigation buttons  E Touch screen  
C Barcode reader  F Power indicator light

Analyzer components.

**Function buttons**
The function buttons are located beneath the touch screen and are aligned with the touch screen buttons.

You press a button to perform the same function as when tapping the aligned button on the touch screen.

**Navigation buttons**
You use the 4 buttons (left, right, up, and down) to highlight an item for selection, scroll through menus, position the cursor, and toggle selections.

**Barcode reader**
The barcode reader aims the scanning beam down in front of the analyzer. Choosing the **Scan** button activates the reader for approximately 5 seconds to read barcodes.
About the analyzer

**Tube entry door**  
Opens and closes automatically during an assay run so that you can insert and remove the assay tube.

*Never open or close the tube entry door manually, unless instructed to do so on the screen.*

**Touch screen**  
You tap the items on the screen with your finger (also when wearing lab gloves), or the stylus included with the analyzer.

**Power button**  
Switch on and switch off the analyzer.
About assays

The analyzer runs a specific assay as determined by the scanned barcode of an assay tube.

The analyzer requires a program, called an assay script, to conduct a specific assay.

New assays can be added to the assay menu by installing assay scripts. You need Supervisor or Administrator access role to install an assay script.

The currently installed assays are listed on the Assay Menu screen.

Related topics
- Installing an assay from a local source (95)
- Adding an assay tube lot (98)
- Running an assay (68)
Overview of the touch screen

To operate the touch screen, use your finger (even when wearing lab gloves) or the stylus included with the analyzer.

**NOTICE**
Damage to the touch screen due to using sharp objects

Using sharp objects on the touch screen may damage the screen and lead to malfunction.

- Do not use sharp objects for operating the touch screen.

**Touch screen elements**

The touch screen is divided into several information and operating areas.

---

A Title bar  
B Subtitle bar  
C Touch screen buttons  
D Function buttons  
E Navigation buttons  
F Scroll bar

[Overview of touch screen.]
Overview of the touch screen

To choose an item, either tap it directly or use the corresponding function button.

**Title bar**
Displays
- User access role icon:
  - User
  - Supervisor
  - Administrator
- Current main menu or assay name, including indication whether the share lot function is enabled (SL).
- User ID
  User IDs shown in screenshots in this publication are for illustration purposes only.
- Possibly alert icon:
  - Warning
  - Service
- In case of a configured DMS or HL7 connection, connectivity monitor icon:
  - So far, there has been no connection or there was an error during the last connection.
  - Last connection was successful.
  - Connection currently transmitting.

To display information on the meaning of an icon, tap it.

**Touch screen buttons**
The touch screen buttons vary depending on the current content of the screen.

**Function buttons**
Perform the same function as the corresponding touch screen buttons.

**Navigation buttons**
Use to highlight an item for selection, scroll through menus, position the cursor, and toggle selections.
Common user actions

In this chapter

Starting the analyzer ........................................ 47
Logging on ...................................................... 48
Changing your password ................................. 50
Assigning or changing your badge barcode .......... 53
Selecting items on the screen ......................... 54
Selecting predefined values ............................. 55
Entering text and numbers .................................. 56
Scanning barcodes ........................................... 57
Locking the analyzer ....................................... 59
Unlocking the analyzer ................................... 61
Switching off the analyzer ............................... 63
4 Common user actions
Starting the analyzer

Switching on the analyzer starts an initialization process that ensures the proper functioning of the analyzer.

**NOTICE**

**Damage to the analyzer due to inappropriate handling**

Inserting an assay tube into the analyzer prior to completion of initialization results in damage to the tube, possible damage to the analyzer and failure of the assay tube to provide a result.

- Do not insert assay tubes or any other object into the tube chamber while it is starting up.

Up to several minutes

**To start the analyzer**

1. Press the power button.
   - If the temperature inside the analyzer is low, the analyzer warms up until the internal temperature reaches the threshold temperature. This may take some time.
   - Power indicator lights up
   - Touch screen lights up
   - Tube entry door opens and closes
   - Actuators inside the analyzer move
   - Self-checks are performed

2. Wait until the login screen is displayed.
   - Initialization may take several minutes.
Logging on

At logon, the analyzer prompts you for your user ID and password, for your badge barcode and password, or for your badge barcode only.

A user ID barcode is a barcode representing your user ID. A badge barcode can be any barcode that complies with the system standards.

The type of authentication prompted at logon depends on the authentication mode setting on the analyzer.

Independent of the authentication mode setting on the analyzer, you can always log on with your user ID and password.

For details on entering information, see Entering text and numbers (56).

Scanning barcodes (57)

About authentication modes (110)

To log on with user ID

1. On the login screen, choose the Login button.

2. To enter your user ID, do one of the following:
   - Enter your user ID manually and choose the OK button.
   - Place your user ID barcode parallel to the analyzer directly beneath the barcode reader. Choose the Scan button.
3 Enter your password and choose the OK button.
   ➔ In the title bar of the Main menu, your access role and user ID are indicated.

To log on with badge barcode

1 On the login screen, choose the Login button.
   ① If a badge barcode authentication mode is set on the analyzer, the barcode reader is enabled automatically.

2 Scan your badge barcode.
   ① If you want to log on with your user ID instead, wait until the time to scan your badge barcode runs out. On the message dialog box, choose the Manual button.

3 If required, enter your password and choose the OK button.
   ➔ In the title bar of the Main menu, your user ID and access role are indicated.

Related topics
• Scanning barcodes (57)
• About authentication modes (110)
Changing your password

All users can change their own passwords.

If users are not exchanged with a connected DMS, you can change your password at anytime.

💡 If users are exchanged with a connected DMS, users can only change their passwords based on a request from the DMS.

🔗 About data exchange with a DMS (118)

When prompted by the analyzer, you must change your password at logon. By default, new users have to change their passwords at first logon.

💡 When you use a default user account for the first time, you must change the password at logon.

🔗 To change your password at logon (52)

🔗 About user IDs and passwords (123)

🔗 Resetting the lost default administrator password (170)

Changing the password of another user

Users with Supervisor or Administrator access role can do the following:

- Change the password of another user up to their own access role.
- Request a password change at next logon for another user up to their own access role.

These changes work the same way as changing any other item of a user information.

🔗 Changing user information (126)

To change your password at anytime

1. Choose Settings > User.
   💡 If you are logged on with User access role, only your own user account is listed.
2 Choose the Info button.

3 Choose the Password item.
   • If you are logged on with User access role, you have access to the Password item and the Badge Barcode item only.

4 Enter your current password and choose the OK button.
   • Your user account is displayed in the password field.

5 Enter your new password and choose the OK button.
   • For passwords, you can use alphanumeric characters, symbols and/or spaces. Passwords are restricted in length to 4–20 characters.

6 To confirm your new password, enter the password again and choose the OK button.
   ➔ Your password is changed.
To change your password at logon

1. When prompted to change your password, choose the OK button.

2. Enter your new password and choose the OK button.
   - For passwords, you can use alphanumeric characters, symbols and/or spaces.
   - Passwords are restricted in length to 4–20 characters.
   - Your user account is displayed in the password field.

3. To confirm your new password, enter the password again and choose the OK button.
   - Your password is changed.
Assigning or changing your badge barcode

All users can assign and change their own badge barcodes.

If users are not exchanged with a connected DMS, you can assign or change your badge barcode at anytime.

💡 If users are exchanged with a connected DMS, users cannot assign or change their badge barcodes directly on the analyzer.

💬 About data exchange with a DMS (118)

Changing the badge barcode of another user

Users with Supervisor or Administrator access role can assign or change the badge barcodes of other users up to their own access role.

Assigning or changing the badge barcodes of another user works the same way as changing any other item of a user information.

💬 Changing user information (126)

To assign or change your badge barcode

1. Choose Settings > User.
   
   🔴 If you are logged on with User access role, only your own user account is listed.

2. Choose the Info button.

3. Choose the Badge Barcode item and choose the Change button.

   🔴 If you are logged on with User access role, you have access to the Password item and the Badge Barcode item only.
To assign a badge barcode, scan your badge barcode twice.

To change your badge barcode, do one of the following:

- To remove an assigned badge barcode, choose the **Remove** button.
- To replace your badge barcode, choose the **Replace** button. Scan your badge barcode twice.

Related topics

- Scanning barcodes (57)

**Selecting items on the screen**

**To select an item using the buttons**

1. Use the ↑ and ↓ navigation buttons to select the desired item.
   - Alternatively, you can tap the item on the screen.
Selecting predefined values

Some items can take one of several predefined values.

Green arrows frame predefined values that can be chosen, when selected.

To select a predefined value

1. Select the item you want to change.
2. Use the Left and Right navigation buttons to select the desired value.
3. Choose the Change button.
4. Choose the Done button or OK button, whichever is available.

Choose the Select button.

→ Detailed information on the selected item or a new screen is displayed, or an action is confirmed.
Entering text and numbers

Depending on the situation, either the alphanumeric or the numeric keyboard is displayed.

<table>
<thead>
<tr>
<th>Key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC</td>
<td>Enter capital letters.</td>
</tr>
<tr>
<td>abc</td>
<td>Enter lower case letters.</td>
</tr>
<tr>
<td>123</td>
<td>Switch to number/symbol entry.</td>
</tr>
<tr>
<td>abc</td>
<td>Switch to letter entry.</td>
</tr>
<tr>
<td>ABC</td>
<td>Switch to letter entry.</td>
</tr>
<tr>
<td>&lt;</td>
<td>Delete the character to the left of the cursor.</td>
</tr>
</tbody>
</table>

Selected keys on the alphanumeric keyboard

To confirm the entry, choose the OK button.

<table>
<thead>
<tr>
<th>Key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLR</td>
<td>Delete the character to the left of the cursor.</td>
</tr>
<tr>
<td>Caps</td>
<td>Switch to letter entry.</td>
</tr>
<tr>
<td>Symb</td>
<td>Switch to symbol entry.</td>
</tr>
<tr>
<td>Enter</td>
<td>Confirm the entry and close the numeric keyboard.</td>
</tr>
</tbody>
</table>

Selected keys on the numeric keyboard

To confirm the entry, choose the Enter button or the Next button.
Common user actions

Scanning barcodes

You use the barcode reader for scanning assay tube, sample, package insert, control, user ID, and badge barcodes.

💡 To maintain patient confidentiality and privacy standards, do not use protected health information (e.g.; patient name, social security number) as the sample ID.

The sample ID barcode must comply with one of the following standards:

- Code 39
- Code 93
- Code 128
  The sample ID barcode must not start with the & character or the = character.
- Codabar
- GS1-DataBar:
  - Omnidirectional
  - Truncated
  - Stacked
  - Stacked Omnidirectional
  - Limited
- EAN-8
- EAN-13
- Interleaved 2 of 5

Roche recommendations for visible inspection of printed barcodes:

- The printing should be of good contrast (dark black on white background).
- The background should be solid white (no transparency, no patterns, no color), non-reflecting material.
- Check for sharp edges and clear lines of the barcode bars (no fringed lines).
- Quiet zone of the barcode must be respected (white space on the left/right of the bars).
- When scratching on the barcodes with the fingers or fingernails, the printing should hold and not smear not even if body oil, disinfection or other fluids are used. Watch out for wrinkles.

All sample barcodes should be printed to achieve ISO/IEC 15416 Grade 2.5-4.0 (formerly ANSI X3, 182-1990 Grade A or B) to ensure reliable barcode reading.
Scanning barcodes

4 Common user actions

To scan an assay tube barcode

1. Choose the Scan button.

2. NOTICE Placing the barcode inappropriately may lead to reading errors or malfunction.

   Place the barcode parallel to the analyzer directly beneath the barcode reader and make sure that the scanner light extends beyond the barcode on both sides.

3. If for some reason, the barcode cannot be read, try again.

4. If the barcode still cannot be read, choose the Enter button and enter the barcode text manually.
Locking the analyzer

Locking the analyzer ensures that it is secured when inactive or left unattended.

The analyzer locks *automatically* or you can lock it *manually*. In each case, the walk-by screen is displayed.

**About locking the analyzer manually**

Lock the analyzer to secure it when you leave it unattended.

You can lock the analyzer manually at any time with the following exceptions:

- When a message box is displayed
- When a process is running (e.g. an assay run)

To lock the analyzer manually ▶ (60)

**Auto-lock and assay runs**

The auto-lock function locks the analyzer automatically after a predetermined period of inactivity called the auto-lock time. You define the auto-lock time in **Settings > System > Auto-Lock Time**. It must be set to 1-1440 minutes. The default value is 3 minutes.

---

**NOTICE**

**Unauthorized access**

An unlocked analyzer may be accessed by unauthorized persons.

- Set the auto-lock time short enough to prevent unauthorized access to the analyzer.
- It is recommended to keep the default value of 3 minutes for the auto-lock time.
During an assay run, the auto-lock function is suspended until the sample preparation, amplification, and detection have completed. It is not possible to lock the analyzer manually until the assay run is finished.

A message is displayed when the assay tube can be removed from the analyzer. The auto-lock function starts again at this point.

If the assay tube remains in the analyzer for longer than the auto-lock time, the analyzer locks and the walk-by screen is displayed.

To log on and use the analyzer when a tube is inserted, you must first remove the assay tube.

A red flashing message at the top of the screen indicates that the assay run completion is in progress. The assay run finishes a short time after the assay tube is removed and you can log on.

If you try to log on before the assay run finishes, the system indicates that it is busy.

Clear the message and log on.

Unlocking the analyzer (61)

To lock the analyzer manually

1. In the top left corner of the screen, choose the user icon.
   - The walk-by screen is displayed.

Related topics

- Logging on (48)
- Unlocking the analyzer (61)
- Running an assay (68)
- System settings (108)
Unlocking the analyzer

The walk-by screen is displayed when the analyzer is locked.

Unlocking the analyzer
When your own account is locked, you must unlock it to continue working. You are returned to the screen in which you were working when the analyzer locked.

- To unlock the analyzer by entering your password  » (61)
- To unlock the analyzer by scanning your badge barcode  » (62)

Logging on to use the analyzer
When another user's account is locked, you must log on to use the analyzer. If the previous user has unsaved data, it is lost when you log on.

- To unlock the analyzer by logging on as another user  » (62)

- The walk-by screen is displayed.

- To unlock the analyzer by entering your password

1. On the walk-by screen, choose the Unlock button.

2. Enter your password and then choose the OK button. » You are returned to the screen in which you were working when the analyzer locked.
4 Common user actions

Unlocking the analyzer

▶ To unlock the analyzer by scanning your badge barcode

1 On the walk-by screen, choose the Unlock button.

   - If the Barcode & Password authentication mode or the Barcode authentication mode is set on the analyzer, the barcode reader is enabled automatically.

2 Scan your badge barcode.

   ➔ You are returned to the screen in which you were working when the analyzer locked.

▶ To unlock the analyzer by logging on as another user

1 On the walk-by screen, choose the Login button.

   ➔ A warning message is displayed.

2 To continue and log on, choose the Yes button.

   - Choosing the No button, returns you to the walk-by screen.

3 Follow the normal logon procedure (cf 48).

Related topics
- Locking the analyzer (59)
Switching off the analyzer

Switching off the analyzer shuts down the software and turns off the power.

⚠️ CAUTION

Loss of power

- Do not turn off the power while the analyzer is running an assay.
- In the event of power failure while an assay is running, do not attempt to remove the assay tube.

When power is restored, power on the analyzer and only remove the assay tube when the message “Please remove the tube slowly and carefully” is displayed.

☐ There is no activity on the analyzer.

To switch off the analyzer

1 Press and hold the power button until both the power indicator light and the touch screen turn dark.
4 Common user actions

Switching off the analyzer
Performing a run

In this chapter

Safety ........................................ 67
Running an assay .......................... 68
Aborting an assay run ................. 72
Result handling ............................. 74
  About results ................................ 75
  Reviewing results ....................... 76
  Sorting and filtering results ........ 80
  Exporting and deleting results ....... 82
Table of contents
Safety

Make sure that you are familiar with the safety instructions in Safety instructions (21).

⚠️ CAUTION
Incorrect results due to using inappropriate assay tubes
Using non certified assay tubes may lead to incorrect results.
- Only use cobas® Liat® Assay Tubes.
- Never reuse assay tubes.

⚠️ CAUTION
Incorrect results or malfunction due to inappropriate handling of assay tubes
Inappropriate handling of assay tubes may lead to incorrect results or malfunction.
- Do not remove or insert an assay tube while the analyzer is performing an assay.
- Always use the barcode of the assay tube sleeve that belongs to the assay tube that you are using.
- Do not break any seals of the assay tube. Take particular care when adding sample.
- Do not force or rotate the assay tube when inserting it.
- Do not reuse spent assay tubes.

NOTICE
Malfunction due to inappropriate handling of the analyzer
Inappropriate handling of the analyzer may lead to malfunction.
- Do not manually open or handle the tube entry door, unless instructed to do so on the screen.
Running an assay

The analyzer runs a specific assay as determined by the scanned barcode of an assay tube.

Running an assay comprises the following actions:

- Transferring sample into an assay tube and capping the tube.
- Scanning the assay tube and sample ID barcodes.
  - To maintain patient confidentiality and privacy standards, do not use protected health information (e.g.; patient name, social security number) as the sample ID.
  - If you must enter the sample ID manually, do not use spaces.
- Inserting the assay tube into the analyzer.
- The analyzer performs the required assay steps and reports the test results.

💡 For information on transferring sample into the assay tube, see the instructions in the package insert or the Instructions for Use for the assay you are running.

💡 Make sure that you use the correct sample type as indicated on the screen.

💡 The auto-lock function is suspended during an assay run. It starts again when the message asking you to remove the assay tube is displayed.

🔍 Locking the analyzer (59)

- Assay tube
- Disposable pipette supplied with the assay tube
- Sample ID barcode

➢ To run an assay

1  Tear open the foil packaging of the assay tube.
   ⚠ Follow the instructions in the package insert or the Instructions for Use of the assay.
   Make sure not to break the first seal at the top of the assay tube.
   Do not remove the protective sleeve until you insert the assay tube in the analyzer.
2 Check the assay tube for possible damage, for example for leaks or broken seals.

3 On the Main menu, select the Run Assay option and choose the Select button.

4 Choose the Scan button.

5 Scan the assay tube barcode.
   1 Do not remove the assay tube sleeve.

6 Choose the Scan button again and then scan the sample ID barcode.
   1 If necessary, you can enter the sample ID manually. No spaces should be used when you enter the values.
7 Transfer the correct type of sample:
   - Use the sample type indicated on the screen.
   - Decap the assay tube.
   - Transfer sample into the assay tube.
   - Recap the assay tube.
   ❗️ Do not remove the assay tube sleeve.
   Dispense the sample to the first seal at the top of the assay tube without an air gap to prevent large bubbles.
   Do not break the first seal at the top of the assay tube.

8 Dispose of all used disposable pipettes in accordance with the disposal policy of your institution and according to local regulations.

9 Choose the Scan button and scan the assay tube barcode again.
   ❗️ If by mistake you removed the assay tube sleeve completely, make sure that the serial numbers and the lot numbers on the assay tube and on the sleeve match, before you scan the barcode.

10 Remove the assay tube sleeve and insert the assay tube into the analyzer until the tube clicks into place.
   ❗️ The assay tube only fits in one way.
   ➔ The tube entry door closes automatically and processing begins.
11 Check the progress, if required.

- In the subtitle bar, a run number (for example “R00056”) and the sample ID are displayed. Choose the ViewData button to view messages or to display the growth curve.
- To abort the assay run, choose the Abort button.

12 When the assay run is complete, the tube entry door opens. A message asks you to remove the assay tube.

- Remove the assay tube and dispose of it in accordance with the disposal policy of your institution and according to local regulations.
- If configured, results are sent to a host automatically.

13 Do one of the following:

- To review the results, choose the Report button.
- To return to the Main menu – and, for example, to start another assay – choose the Main button.
- To view the growth curve or messages, choose the ViewData button.

- Related topics

- Reviewing results (76)
- About assays (42)
- Scanning barcodes (57)
- Aborting an assay run (72)
Aborting an assay run

To abort an assay run

1. On the assay run status screen, choose the **Abort** button.

2. On the confirmation message, choose the **Yes** button.

3. Enter your password and choose the **OK** button.
   - Depending on the setting of the analyzer, scan your badge barcode to abort the run.
   - You can choose the **Back** button to return to the previous screen.
   - The analyzer stops assay processing.
   - The analyzer writes a result report.

4. When asked to do so, remove the assay tube.

5. Dispose of the assay tube in accordance with the disposal policy of your institution and according to local regulations.
Performing a run

Do one of the following:

- To view the result report, choose the **Report** button.
- To return to the **Main** screen, choose the **Main** button.
Result handling

In this section

- About results (75)
- Reviewing results (76)
- Sorting and filtering results (80)
- Exporting and deleting results (82)
About results

The way results are calculated and displayed depends on the intended use of each individual assay.

If a run has the run status “Warning” (on the message screen and in the result report), but the run did not abort, the result of this run is still valid.
Reviewing results

Users with Supervisor or Administrator access role can accept or reject results.

You typically review results as part of assay processing. Alternatively, you can select results on the Results screen and review them.

By default, on the Results screen, all results since last Monday are displayed sorted by date in descending order.

💡 If the analyzer is set up to send results automatically to a host system, reviewing is not done on the analyzer.

About data exchange with a DMS (118)

Logged on with Supervisor or Administrator access role.

To review results from the assay status screen

1. From the assay status screen, you can do the following:
   - Display the growth curve (see step 2).
   - Display and print run status information (see step 3).
   - Review and print the result report (see steps 4 to 9).
   📚 You can perform these actions when the assay run is complete.

2. To display the growth curve, on the assay status screen, choose the ViewData button. Choose the Real-time PCR option.
   📚 From the graph screen, you can print the graph. To zoom into an area of the graph, drag a finger or the stylus across the area into which you want to zoom.
   To zoom out, tap the screen. From the drop-down list, either choose the Zoom Out option to zoom out incrementally, or choose the Zoom Normal option to the original magnification.
To display run status information, on the assay status screen, choose the **ViewData** button. Choose the **Message** option.

1. From the message screen, you can print the messages.

3. To view the result report, on the assay status screen, choose the **Report** button.

4. On the **Result Report** screen, if the result information does not fit into one screen, use the ↑ and ↓ navigation buttons to display the rest of the information.

5. From the **Result Report** screen, you can do the following:
   - Approve or reject the result (see steps 7 to 8).
   - Print the result report (see step 9).

6. To approve or reject the result, on the **Result Report** screen, choose the **Approval** button.

7. On the **Approval** message, choose the **Release** button to accept the result or the **Reject** button to reject it.
   - On the result report, your user ID is added to the **Approved By** line.

8. To print the result report, on the **Result Report** screen, choose the **Print** button.

   1. If the analyzer is set up to print the results automatically or to send the results automatically to an information system or a POCT1-A interface, this step is not required.
To review results from the Results screen

1. On the Main menu, select the Results option and choose the Select button.
   ➔ The Results screen is displayed. By default, all results since last Monday are displayed sorted by date in descending order.

2. Optionally, sort and/or filter the results as described in (p 80).

3. On the Results screen, select the desired result entry.
   ➔ Positive
   ➔ Negative
   ➔ Indeterminate
   ➔ Invalid
   ➔ Aborted
   ➔ Approved
   ➔ Rejected
   ➔ Sent, but not yet confirmed by host
   ➔ Sent to host successfully
   Double-tap an entry to select a result and to sort the table by the corresponding column.
   A sorting indicator marks the sorting column.

4. From the Results screen, you can do the following:
   • Review and print the result report (see steps 5 to 11).
   • Save the result in a specific location or send the result to a host (see steps 12 to 14).

5. To review the result report, on the Results screen, choose the View button.

6. On the Result Report screen, if the result information does not fit into one screen, use the and navigation buttons to display the rest of the information.

7. From the Result Report screen, you can do the following:
   • Approve or reject the result (see steps 8 to 10).
   • Print the result report (see step 11)

8. To approve or reject the result, on the Result Report screen, choose the Approval button.
Performing a run

9 On the Approval message, choose the Release button to accept the result or the Reject button to reject it.

10 On the confirmation message, choose the Yes button. 

   ➔ On the result report, your user ID is added to the Approved By line.

11 To print the result report, on the Result Report screen, choose the Print button.

   ⚠ If the analyzer is set up to print the results automatically or to send the results automatically to an information system or a POCT1-A interface, this step is not required.

12 To save the result report or to send it to a host, on the Results screen, choose the File button. From the File screen, you can do the following:

   • Save the report in a specific location (see step 13).
   • Send the report to a host (see step 14).

13 To save the report in a specific location, on the File screen, choose the Save File option. Choose one of the options and follow the instructions on the screen:

   • USB Key
   • Share Folder
   • Service FTP
   • LAN FTP

14 To send the result to a HIS, LIS, or a POCT1-A interface, choose the Send option and follow the instructions on the screen.
Sorting and filtering results

You can sort and/or filter which results are displayed on the Results screen.

By default, on the Results screen, all results since last Monday (corresponding to the All files and This week filters) are displayed sorted by date in descending order.

For sorting, the following rules apply:

- A white underline as sorting indicator is added to the column header of the column used for sorting.
- The sorting order follows the order of characters in the ASCII table.
- Sorting by the Results column cycles through sorting by the status columns.
- If there is more than 1 result for a sorting criterion, the results are sorted further:
  - When sorting by the Date column, results with the same date are sorted by run number (not displayed).
  - When sorting by the Sample ID column, results with the same sample ID are sorted by date first and by run number second.
  - When sorting by the Assay column, results from the same assay are sorted by date first and by run number second.
  - When sorting by the Results column, results with the same status are sorted by date first and by run number second.

Logged on with Supervisor or Administrator access role.

To sort and filter results on the Results screen

1. On the Main menu, select the Results option and choose the Select button.
2. The Results screen is displayed.
Performing a run

2 To sort the results, on the Results screen, do the following:
   - To sort by a different column, double-tap that column.
   - To toggle between ascending and descending sorting order, double-tap the column again.
   - To cycle through sorting by the status columns, double-tap the Result column repeatedly.

3 To filter the results, on the Results screen, choose the Filter button.

4 Select the filter.
   Use the ▲ and ▼ navigation buttons to select a specific filter.
   - All files
   - Sample ID
   - Assay
   - User ID
   - Calib
   - Rejected
   - Needs Approval
   - Export and delete results (refer to (82) for details)

   With filter options ending with a colon, you must enter a value, for example an ID or a name.

5 Choose the Next button.

6 On the next filter screen, define the time period for which the results should be included.

   Use the ▲ and ▼ navigation buttons to select a specific period.
   - This week (results since last Monday)
   - All dates (results from any date)
   - Today (results from today)
   - Last 2 days (results from yesterday or today)
   - Last month (results from the last 30 days)
   - MMDDYY-MMDDYY (results from the specified period)

7 Choose the OK button.

   If 1-500 results match the filter criteria, the filtered results are displayed on the Results screen.
   If no result or too many results (>500) match the filter criteria, a message is displayed. To return to the filter screen, choose the Filter button.
Exporting and deleting results

You can only delete a result after exporting it to a different location. Once you have deleted a result, you can no longer retrieve it from the analyzer.

Roche recommends backing up all results regularly. You can use the advanced tools key for this purpose.

⚠️ CAUTION

Data security

Results backed up by the advanced tools key are stored as plain text files and so their content is accessible to unauthorized persons.

- Ensure that you store backed up results safely and securely so that they are not accessible by unauthorized persons.

For information on backing up results, refer to the cobas® Liat® Advanced Tools Key Guide.

Logged on with Supervisor or Administrator access role.

To export and delete a result

1. On the Main menu, select the Results option and choose the Select button. → The Results screen is displayed.

2. Choose the Filter button.

3. Use the ↑ and ↓ navigation buttons to select the Export and Delete Results option.

4. Choose the Next button.
5 On the next filter screen, define the kind of results you want to delete. Use the $\uparrow$ and $\downarrow$ navigation buttons to select a specific criterion.

- Export and Delete all results
- Export and Delete results over 7 days old
- Export and Delete results over 30 days old
- Export and Delete results over 60 days old
- Export and Delete results over 90 days old
- Export and Delete results over 180 days old
- Export and Delete results over 365 days old
- Export and Delete results before MMDDYY

You must enter the required date, for example “103115” to delete all results older than October 31, 2015.

6 Choose the OK button.

7 Choose the export location:

- USB Key
- Share Folder
- Service FTP
- LAN FTP

8 Choose the Select button.

9 If you use a USB key, insert the USB key at the rear of the analyzer. Choose the OK button.
10 On the message dialog box, choose the Yes button to confirm that this is the correct criterion and that you want to export and delete all results that meet this criterion.

11 Wait for the operation to complete and choose the OK button to return to the Main menu.

**Related topics**
- Network definitions (113)
- Network resources (114)
Set-up

In this chapter

About setting up the analyzer ........................................ 87
Defining values ................................................................... 88
Installing and updating assays ........................................... 90
Installing or updating assays from a USB key .................... 90
Installing or updating an assay from the Roche remote service platform .................................................. 93
Installing an assay from a local source .............................. 95
Registering assays .............................................................. 96
Adding an assay tube lot .................................................... 98
Deleting assay tube lots ..................................................... 103
Uninstalling assays ............................................................ 104
Viewing and printing assay tube lot information ................. 105
Defining system settings .................................................... 107
System settings .................................................................. 108
About authentication modes.............................................. 110
Configuring barcode settings ............................................ 110
Network definitions ........................................................... 113
Network resources ............................................................. 114
Defining network resources .............................................. 114
Using the share lot function .............................................. 115
Connections to a host system ............................................ 117
Defining settings for host systems .................................... 117
About data exchange with a DMS .................................... 118
Connecting the analyzer to a DMS .................................... 120
Managing users ................................................................. 122
Overview of user account access roles ............................. 122
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>About user IDs and passwords</td>
<td>123</td>
</tr>
<tr>
<td>Defining new users</td>
<td>123</td>
</tr>
<tr>
<td>Changing user information</td>
<td>126</td>
</tr>
<tr>
<td>Deleting a user account</td>
<td>128</td>
</tr>
<tr>
<td>Updating the software</td>
<td>129</td>
</tr>
<tr>
<td>Registering the software</td>
<td>132</td>
</tr>
<tr>
<td>Viewing software and hardware information</td>
<td>134</td>
</tr>
<tr>
<td>Viewing information about the analyzer and software</td>
<td>134</td>
</tr>
<tr>
<td>Viewing system information</td>
<td>136</td>
</tr>
</tbody>
</table>
About setting up the analyzer

Setup tasks are performed from the **Settings** screen.

- With Administrator access role, you can perform all setup tasks. With Supervisor access role, you can perform the setup tasks except for the Network definitions.

- Result and setup data are retained on the analyzer even if it is not connected to the mains.
Defining values

You define values by entering text or by selecting a predefined value.

To enter text

1. Use the \( \uparrow \) and \( \downarrow \) navigation buttons to select the configuration item.

2. Choose the appropriate button, typically the Select button.

3. Use the \( \uparrow \) and \( \downarrow \) navigation buttons to select the specific item that you want to define. Choose the appropriate button, typically the Enter button.

   - The alphanumeric keyboard or the numeric keyboard is displayed.

4. Enter the value and to confirm choose the OK button.

   - The screen is displayed again where you have made the last item selection.

   - If the text is not valid, a message informs you about this fact.

To select a predefined value

1. Use the \( \uparrow \) and \( \downarrow \) navigation buttons to select the item you want to change.

   - Green arrows frame predefined values that can be chosen.

2. Use the Left \( \leftarrow \) and Right \( \rightarrow \) navigation buttons to select the desired value.

3. Choose the Change button.
To save the setting, choose the **Enter** button or **OK** button, whichever is available.
Installing and updating assays

You install assays typically when Roche deploys new assays or a new version of an assay.

To be able to use a new or updated assay, perform the following steps:

1. Install the assay script in one of the following ways:
   - From a USB key
   - From the Roche remote service platform
   - From a local source (for new assays only)
2. Add the assay tube lot
   With an update, this step is not always required. If assay tube lot validation is required, a message informs you.
3. Allow users to perform runs using the new assay (i.e., changing the user information)

⚠️ Do not disconnect the power supply from the analyzer while installing or updating an assay.

In this section
Installing or updating assays from a USB key (90)
Installing or updating an assay from the Roche remote service platform (93)
Installing an assay from a local source (95)
Registering assays (96)
Adding an assay tube lot (98)
Deleting assay tube lots (103)
Uninstalling assays (104)

Installing or updating assays from a USB key

You can install or update an assay from the USB key.

After an assay update, you may have to revalidate the assay tube lots that are in use.

Logged on with Administrator access role.
To install or update an assay from a USB key

1. While on the Main menu, insert the USB key at the rear of the analyzer.

2. On the message dialog box, choose the OK button.

3. Enter your password and choose the OK button.
Installing and updating assays

4 Choose the Yes button to confirm that you want to install or update the listed assays.
   ➔ A progress screen is displayed. All available assays or updates are installed.

5 Follow the dialog box: “Please remove the USB drive, wait 5 seconds and hit <OK> to continue.”
   ➔ The script installation or update completes. This process can take several minutes.

6 Do one of the following:
   • When a message indicating a successful installation or update is displayed, choose the OK button to confirm.
     You can check the new assay in the Assay Menu screen.
     You can check the updated assay script version by choosing Settings > Versions.
   • When a message indicating an unsuccessful update is displayed, choose the OK button to return to the Main menu.
     You should repeat steps 1 to 5.

7 If assay tube lot validation is required, a message is displayed.
   • Choose the Display button to display a list of assays that must be revalidated.
   • Choose the OK button to return to the Main menu.

8 You may have to register the assay manually.

Related topics
   • Installing or updating an assay from the Roche remote service platform (93)
   • Adding an assay tube lot (98)
   • Registering assays (96)
Installing or updating an assay from the Roche remote service platform

You can install or update an assay from the Roche remote service platform.

When a new assay or an assay update becomes available, a message is displayed on the analyzer screen during logon.

If you are logged on with User access role, a message is displayed asking you to contact your supervisor or system administrator.

After an assay update, you may have to revalidate the assay tube lots that are in use.

The analyzer must be connected to a network and the Internet.
Firewall is set up to allow communication with
Host: remoteservice.roche.com
IP: 62.209.44.11
Port: 443
Protocol: TCP / SSL

Logged on with Supervisor or Administrator access role for installation, with Administrator for update.

To install or update an assay from the Roche remote service platform

1. When a new assay or an update to an assay is available, a message is displayed on the analyzer screen during logon.

2. On the message dialog box, choose the OK button.
3 Enter your password and choose the **OK** button.

4 On the message dialog box, choose the **Yes** button. → A progress screen is displayed.

5 When the installation is complete, a message is displayed. Choose the **OK** button.

6 If assay tube lot validation is required, a message is displayed.
   - Choose the **Display** button to display a list of assays that must be validated.
   - Choose the **OK** button to return to the **Main** menu.

7 You may have to register the assay manually.

**Related topics**
- Adding an assay tube lot (98)
- Registering assays (96)
Installing an assay from a local source

You can install an assay from a USB key, an FTP server, or a share folder in your network.

☐ Defining network resources (114)

☐ If you install from a network server, make sure that the assay script is stored in the appropriate location and the network settings are configured correctly.

☐ Logged on with Administrator or Supervisor access role.

▷ To install an assay from a local source

1. On the Main menu, select the Assay Menu option and choose the Select button.
   ➔ All currently installed assays are listed.

   0 You may have to scroll down to display this option.

3. Choose the Scan button.

4. Within the time limit for inserting tubes, place the barcode from the assay package insert or the Instructions for Use under the barcode reader.
   ➔ The Download software from: field becomes available.
5 Define where to download the software from.
   - Select the **USB Key** option, if you install from a USB key.
   - If you have defined a different install source setting, choose the appropriate option.

6 If you use a USB key, ensure the **signed ZIP file** of the assay to be installed is in the root folder of the USB key.

7 If you use a USB key, insert the USB key at the rear of the analyzer.

8 Choose the **Next** button.

9 If you installed from a USB key, remove the USB key from the rear of the analyzer when asked to do so.

10 Decide whether you want to validate this assay (add an assay tube lot) now or later.

11 You may have to register the assay manually.

**Related topics**
- Adding an assay tube lot (98)
- Registering assays (96)
- System settings (108)
- Defining network resources (114)

### Registering assays

New and updated assays must be registered within 30 days.

You can use the unregistered assays during the registration period. But once this period has expired, the assay can no longer be used for testing until the activation has been completed.

—if the analyzer is connected to the Roche remote service platform, the analyzer automatically tries to register the assay. If this automatic registration fails, a message is displayed and a user must register the assay manually.
Logged on with Administrator access role.

To register an assay manually

1. Start the registration process.
   - If a message is displayed, choose the **Activate** button.
   - If no message is displayed, in the **Main** menu, choose the **Assay Menu** option.

2. Select the assay that needs registering and choose the **Select** button.
   - Unregistered assays are marked with a number in the **Days left** column.
   - A red icon at the end of an entry indicates that the registration period has expired.

3. On the **Report** screen, choose the **Activate** button.

4. From the message dialog box, note the registration code.

5. Call your Roche representative and provide the registration code.

6. The Roche representative issues an activation code.
Installing and updating assays

Adding an assay tube lot

Assay tube lots have a certain shelf life. Each new assay tube lot has to be added on the analyzer and is validated by running a negative and positive control.

Adding an assay tube lot includes the following activities:

1. Scanning the new lot data
2. Performing QC (validating the assay tube lot)

Sharing assay tube lots

Instead of adding and validating the same assay tube lot on several analyzers, you can share assay tube lots between analyzers in the following ways:

- By synchronizing the assay tube lots using the advanced tools key.
- By using the share lot function over the share lot folder.
- By connecting the analyzers to a DMS and enabling the exchange of lots.
Do not use different ways to share assay tube lots at the same time.

- For information on the advanced tools key, see the cobas® Liat® Advanced Tools Key Guide.
- For information on using the share lot function, refer to Defining network resources (114)
- For information on the connection to a DMS, refer to Defining settings for host systems (117)

- Before using the first assay tube of a new lot.
- When revalidation of an assay tube lot is necessary.

- Assay tube from the new lot
- Package insert or Instructions for Use of the assay tube lot for the specific assay
- Disposable pipette

- Assay installed

To add an assay tube lot

1. On the Main menu, select the Assay Menu option and choose the Select button.

2. Select the [New Lot] option and choose the Select button.
   - Assay: 4-letter name of the installed assays
   - Lot#: Validated assay tube lot numbers
   - Validated: Date of validation
   - Expiration: Date the lot is set to expire
   - Days left: Days left for activation of the assay
3 Obtain the package insert or the Instructions for Use from the new lot. Choose the Scan button. Scan the package insert barcode on the first page of the package insert or the Instructions for Use of the lot you want to add.

4 You may have to confirm that you have read the package insert.

5 Choose the Scan button and place the barcode of the negative control under the barcode reader.

6 Follow the instructions in the assay tube package insert or the Instructions for Use on how to add the negative control sample to an assay tube from this lot.

7 Dispose of all used disposable pipettes in accordance with the disposal policy of your institution and according to local regulations.

8 Choose the Scan button.

9 Place the prepared assay tube under the barcode reader.
10 Within the time limit for inserting assay tubes, insert the prepared assay tube in the analyzer. → Processing starts automatically.

11 Wait for a message to inform you that the negative control result has been accepted. Choose the OK button to confirm the message.

If the QC was not completed successfully, repeat the measurement of the negative control.

12 When asked to do so, remove the assay tube from the analyzer. Dispose of the assay tube in accordance with the disposal policy of your institution and according to local regulations.

13 Wait until the information in the title bar stops flashing, then choose the Back button.

14 Choose the Scan button and place the barcode of the positive control under the barcode reader.

15 Follow the instructions in the assay tube package insert or the Instructions for Use on how to add the positive control sample to an assay tube from this lot.

16 Dispose of all used disposable pipettes in accordance with the disposal policy of your institution and according to local regulations.
17 Choose the **Scan** button.

18 Place the prepared assay tube under the barcode reader.

19 Within the time limit for inserting assay tubes, insert the prepared assay tube in the analyzer. ► Processing starts automatically.

20 Wait for a message to inform you that the positive control result has been accepted. Choose the **OK** button to confirm the message.

   - If the QC was not completed successfully, repeat the measurement of the positive control. Check the Instructions for Use of the control for further information.

21 When asked to do so, remove the assay tube from the analyzer. Dispose of the assay tube in accordance with the disposal policy of your institution and according to local regulations.

22 Wait until the information in the title bar stops flashing, then choose the **Back** button.

23 Check the entry for the new assay tube lot.
Deleting assay tube lots

If you delete the assay tube lot, you cannot run the associated assay anymore, unless there is another validated assay tube lot for this assay or the deleted assay tube lot is added and revalidated again.

If assay tube lots are exchanged with a DMS, you cannot delete assay tube lots on the analyzer.

About data exchange with a DMS (118)

Logged on with Supervisor or Administrator access role

To delete an assay tube lot

1. On the Main menu, select the Assay Menu option and choose the Select button.

2. Select the assay tube lot entry.

3. Choose the Delete button.

4. On the confirmation message dialog box, choose the OK button.

   The lot entry NA on the Assay Menu screen indicates that there are no validated lots for this assay.
Uninstalling assays

Uninstalling an assay removes the assay script from the analyzer.

Roche does not recommend uninstalling assays.

Logged on with Administrator access role.

To uninstall an assay

1. On the Main menu, select the Assay Menu option and choose the Select button.

2. Select the assay entry.
   - If there are validated assay tube lots for the assay, there may be several entries for this assay.

3. If there are assay tube lots for the assay you want to uninstall, delete them all first.
   - Select the assay tube lot entry.
   - Choose the Delete button.
   - When all assay tube lots are deleted, there is only one entry left for the assay and the value in the Lot# column is NA.

4. Choose the Delete button.

5. On the confirmation message dialog box, choose the Yes button.

6. Enter your password and choose the OK button.

Related topics

- Deleting assay tube lots (103)
Viewing and printing assay tube lot information

You can view and print the details of all added assay tube lots.

To view and print assay tube lots

1. On the Main menu, select the Assay Menu option and choose the Select button.

2. To print the list of installed assays and assay tube lots, choose the Print button.

⇒ The list of installed assays and assay tube lots is sent to the printer.
To view and print control test results of a lot

1. On the **Main** menu, select the **Assay Menu** option and choose the **Select** button.

2. Select the assay tube lot you are interested in and choose the **Select** button.

3. On the report screen for the control, do either of the following:
   - To print the results, choose the **Print** button.
   - To display the report screen of other controls, choose the **Next** button.
     (Choose the **Previous** button to display the previous report screen again.)

4. To return to the assay tube lot list, choose the **Back** button.
Defining system settings

Define the general operating environment.

In this section

- System settings (108)
- About authentication modes (110)
- Configuring barcode settings (110)
System settings

To define the general operating environment, enter the required information.

→ Settings > System

💡 For your records, you can print the system settings using the Print button.

<table>
<thead>
<tr>
<th>System item</th>
<th>Configuration Item</th>
<th>Comment</th>
</tr>
</thead>
</table>
| Time & Date   | Time & Date        | Time format: hh:mm:ss
Date format: mm-dd-yyyy                                                     |
|               | SNTP               | Choose Yes to have date and time automatically updated from a server.
If you choose Yes, you must define the server.
Do not manually change the time and date when SNTP is on.                  |
|               | Server             | IP address or DNS name of the SNTP server from which time and date are obtained. This server can be any workstation in the network or any remote SNTP server. |
|               | Time Zone          | Choose the time zone where your analyzer is located.                    |
|               | Brightness         | Screen brightness. 1 = darkest, 7 = brightest.                          |
|               | Printer            | Use a standard PCL compatible printer. (PCL 3 GUI is not supported.)     |
| LPT1          |                    | Choose for a USB printer. No further configuration is required.          |
| NET0          |                    | Choose for a network printer. Choose the Select button and then enter the required printer information:
• Server Name  |                     | Name of the print server.                                               |
• Share Name    |                     | Name of the share.                                                      |
• User Name     |                     | User name of the analyzer-specific account on the print server.          |
• Password      |                     | Password of the analyzer-specific account on the print server.           |
| Printing Mode |                    | Keep the default Grayscale, if a grayscale printer is connected. Choose Color, if a color printer is connected. |
| Auto Print    |                    | Choose Yes to print the results automatically as soon as assay processing is finished. |

oler

System configuration items
### Sound

**Initialization, Barcode Scan, Tube Insert, Assay Aborted, Touch Screen, Key Clicks**

Choose **Off** to turn off the acoustic signal for the selected event.
Choose any of the available signal types to define that an acoustic signal should be sounded at the end of the selected event.

**Volume**

Choose a value between 0 (off) to 5 (loudest).
The volume setting applies to all acoustic signals.

### Tube Insert Time

1-20 seconds

Maximum time in seconds allowed for inserting the assay tube after scanning its barcode.
Defining a short time ensures that the inserted assay tube is the same that was just scanned, and it reduces the likelihood of contamination of the reaction chamber.

### Name of Machine

Up to 15 alphanumeric characters.
By default, the analyzer serial number.

### Tilt Sensing

Enable

If the analyzer is tilted by ten or more degrees, you cannot start an assay run or an assay tube lot validation.
If the analyzer is tilted by ten or more degrees during a run, the user is informed. The assay run is completed.
Roche recommends having this feature enabled.

### Language

You cannot currently choose this option.

### Auto-Lock Time

1-1440 minutes

Time in minutes after which the auto-lock function is activated.
Default time is 3 minutes.

- **To prevent unauthorized access, it is recommended to set a short auto-lock time, e.g., by keeping the default value of 3 minutes.**

### Default Settings

Choosing the Select button resets all values defined from the Settings screen to the factory values, except for the Time & Date and Name of Machine values.

### Authentication

User ID & Password, Barcode & Password, or Barcode

Choose the authentication mode for logging on to the analyzer.

- **About authentication modes (110)**

- **Consider the level of security provided by the different authentication modes.**

### Barcode Settings

Codabar, Code 39, Code 93, Code 128, EAN-8, EAN-13, GS1-DataBar, Interleaved 2 of 5

Enable/disable and customize the supported barcode standards.
By default, all barcode standards except Interleaved 2 of 5 are enabled.
Code 128 is the barcode standard for system barcode labels (e.g., on assay tubes) and cannot be disabled.

- **Configuring barcode settings (110)**

---

<table>
<thead>
<tr>
<th>System item</th>
<th>Configuration item</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sound</td>
<td>Initialization, Barcode Scan, Tube Insert, Assay Aborted, Touch Screen, Key Clicks</td>
<td>Choose <strong>Off</strong> to turn off the acoustic signal for the selected event. Choose any of the available signal types to define that an acoustic signal should be sounded at the end of the selected event.</td>
</tr>
<tr>
<td></td>
<td>Volume</td>
<td>Choose a value between 0 (off) to 5 (loudest). The volume setting applies to all acoustic signals.</td>
</tr>
<tr>
<td>Tube Insert Time</td>
<td>1-20 seconds</td>
<td>Maximum time in seconds allowed for inserting the assay tube after scanning its barcode. Defining a short time ensures that the inserted assay tube is the same that was just scanned, and it reduces the likelihood of contamination of the reaction chamber.</td>
</tr>
<tr>
<td>Name of Machine</td>
<td>Up to 15 alphanumeric characters</td>
<td>By default, the analyzer serial number.</td>
</tr>
<tr>
<td>Tilt Sensing</td>
<td>Enable</td>
<td>If the analyzer is tilted by ten or more degrees, you cannot start an assay run or an assay tube lot validation. If the analyzer is tilted by ten or more degrees during a run, the user is informed. The assay run is completed. Roche recommends having this feature enabled.</td>
</tr>
<tr>
<td>Language</td>
<td></td>
<td>You cannot currently choose this option.</td>
</tr>
<tr>
<td>Auto-Lock Time</td>
<td>1-1440 minutes</td>
<td>Time in minutes after which the auto-lock function is activated. Default time is 3 minutes.</td>
</tr>
<tr>
<td>Default Settings</td>
<td></td>
<td>Choosing the Select button resets all values defined from the Settings screen to the factory values, except for the Time &amp; Date and Name of Machine values.</td>
</tr>
<tr>
<td>Authentication</td>
<td>User ID &amp; Password, Barcode &amp; Password, or Barcode</td>
<td>Choose the authentication mode for logging on to the analyzer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>About authentication modes (110)</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Consider the level of security provided by the different authentication modes.</strong></td>
</tr>
<tr>
<td>Barcode Settings</td>
<td>Codabar, Code 39, Code 93, Code 128, EAN-8, EAN-13, GS1-DataBar, Interleaved 2 of 5</td>
<td>Enable/disable and customize the supported barcode standards. By default, all barcode standards except Interleaved 2 of 5 are enabled. Code 128 is the barcode standard for system barcode labels (e.g., on assay tubes) and cannot be disabled.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Configuring barcode settings (110)</strong></td>
</tr>
</tbody>
</table>

---

**System item** | **Configuration item** | **Comment**
---|---|---
Sound | Initialization, Barcode Scan, Tube Insert, Assay Aborted, Touch Screen, Key Clicks | Choose **Off** to turn off the acoustic signal for the selected event. Choose any of the available signal types to define that an acoustic signal should be sounded at the end of the selected event. |
|             | Volume            | Choose a value between 0 (off) to 5 (loudest). The volume setting applies to all acoustic signals. |
| Tube Insert Time | 1-20 seconds | Maximum time in seconds allowed for inserting the assay tube after scanning its barcode. Defining a short time ensures that the inserted assay tube is the same that was just scanned, and it reduces the likelihood of contamination of the reaction chamber. |
| Name of Machine | Up to 15 alphanumeric characters | By default, the analyzer serial number. |
| Tilt Sensing | Enable | If the analyzer is tilted by ten or more degrees, you cannot start an assay run or an assay tube lot validation. If the analyzer is tilted by ten or more degrees during a run, the user is informed. The assay run is completed. Roche recommends having this feature enabled. |
| Language | | You cannot currently choose this option. |
| Auto-Lock Time | 1-1440 minutes | Time in minutes after which the auto-lock function is activated. Default time is 3 minutes. |
| Default Settings | | Choosing the Select button resets all values defined from the Settings screen to the factory values, except for the Time & Date and Name of Machine values. |
| Authentication | User ID & Password, Barcode & Password, or Barcode | Choose the authentication mode for logging on to the analyzer. |
| | | **About authentication modes (110)** |
| | | **Consider the level of security provided by the different authentication modes.** |
| Barcode Settings | Codabar, Code 39, Code 93, Code 128, EAN-8, EAN-13, GS1-DataBar, Interleaved 2 of 5 | Enable/disable and customize the supported barcode standards. By default, all barcode standards except Interleaved 2 of 5 are enabled. Code 128 is the barcode standard for system barcode labels (e.g., on assay tubes) and cannot be disabled. |
| | | **Configuring barcode settings (110)** |
About authentication modes

The authentication mode determines the logon method.

You can choose between the following authentication modes:

• **User ID & Password:**
  To log on to the analyzer, you must enter your user ID and password. Instead of manually entering your user ID, you can scan a corresponding user ID barcode (a barcode representing your user ID).

• **Barcode & Password:**
  To log on to the analyzer, you must scan your assigned badge barcode and enter your password.

• **Barcode:**
  To log on to the analyzer, you must scan your assigned badge barcode only.
  This authentication mode provides the lowest level of security.

💡 Independent of the set authentication mode, you can always log on with your user ID and password.

Related topics

- Logging on (48)
- Managing users (122)

Configuring barcode settings

You can enable/disable and customize the supported barcode standards.

By default, all barcode standards except Interleaved 2 of 5 are enabled.

Code 128 is the barcode standard for system barcode labels (e.g., on assay tubes) and cannot be configured.

💡 Changing barcode settings may take some time. Wait until the analyzer is responsive again.
### About barcode settings

You can configure the following barcode settings:

<table>
<thead>
<tr>
<th>Barcode standard</th>
<th>Min. length [characters]</th>
<th>Max. length [characters]</th>
<th>Options</th>
<th>Customization item</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codabar</td>
<td>2</td>
<td>25</td>
<td>• Enabled (a)</td>
<td>Start/Stop Char</td>
<td>• Omit Transmission (a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Disabled</td>
<td></td>
<td>• Transmit</td>
</tr>
<tr>
<td>Code 39</td>
<td>2</td>
<td>25</td>
<td>• Enabled (a)</td>
<td>Checksum</td>
<td>• Enabled (a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Disabled</td>
<td></td>
<td>• Disabled</td>
</tr>
<tr>
<td>Code 93</td>
<td>2</td>
<td>25</td>
<td>• Enabled (a)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Disabled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code 128</td>
<td>-</td>
<td>-</td>
<td>• System barcode standard</td>
<td></td>
<td>• Not configurable</td>
</tr>
<tr>
<td>EAN-8</td>
<td>8 (b)</td>
<td>8 (b)</td>
<td>• Enabled (a)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Disabled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAN-13</td>
<td>13 (b)</td>
<td>13 (b)</td>
<td>• Enabled (a)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Disabled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GS1-DataBar</td>
<td>14 (b)</td>
<td>14 (b)</td>
<td>• Enabled (a)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Disabled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interleaved 2 of 5</td>
<td>2</td>
<td>26</td>
<td>• Enabled (a)</td>
<td>Checksum (c)</td>
<td>• Enabled (a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Disabled</td>
<td></td>
<td>• Disabled</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fix length</td>
<td>One discrete length (a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Disabled</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Barcode length</td>
<td>2-26 (d)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(in increments of 2)</td>
</tr>
</tbody>
</table>

#### Barcode settings configuration

(a) Default value
(b) Fixed length including check digit
(c) Checksum digit calculation algorithm: Uniform Symbology Specification (USS)
(d) Default value: 10

---

To avoid barcode scanning errors when using the barcode standard Interleaved 2 of 5, it is recommended to have checksum and fix length enabled.

---

Logged on with Administrator or Supervisor access role.

---

### To configure barcode settings

1. On the **Main** menu, choose **Settings > System > Barcode Settings.** Choose the **Select** button.

   ➤ The **Barcode Settings** screen is displayed listing all supported barcode standards.
2 To select a barcode standard, use the \( \leftarrow \) and \( \rightarrow \) navigation buttons. Choose the Select button. → The barcode settings of the selected barcode standard are displayed. If supported, the barcode settings include customization items.

3 To enable/disable a barcode standard, use the Left \( \leftarrow \) and Right \( \rightarrow \) navigation buttons and select the desired value.
   - To enable the Interleaved 2 of 5 barcode standard, on the confirmation message, choose the Yes button.

4 To customize a barcode standard, use the \( \leftarrow \) and \( \rightarrow \) navigation buttons and select the customization item (e.g., the Checksum item).

5 Use the Left \( \leftarrow \) and Right \( \rightarrow \) navigation buttons and select the desired value.
   - To customize the Interleaved 2 of 5 barcode standard, on the confirmation messages, choose the Yes button.

6 Choose the Done button. Wait until the analyzer applies the changed barcode settings and is responsive again.
   * Changing barcode settings may take a short time to apply.

- **Related topics**
  - Scanning barcodes (57)
Network definitions

Define the network environment.

→ Settings > Network

⚠️ CAUTION

Breach of confidentiality and privacy

Unprotected network connections may allow access by unauthorized persons and confidential personal information may be obtained.

- When connecting the analyzer to a network, make sure that the connection is secure and monitored for security breaches.
- If parts of your network, which the analyzer uses to exchange data, are connected by WLAN, make sure to use WPA2 encryption.

You can connect the analyzer to a 10/100 Ethernet network.

💡 The analyzer is not ping-able.

- For detailed information on how to set up communication between the analyzer and a host system, contact your Roche representative.

<table>
<thead>
<tr>
<th>Network item</th>
<th>Configuration item</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHCP</td>
<td>Yes</td>
<td>When choosing Yes, the network definitions are automatically obtained from your DHCP server.</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>When choosing No, you can select the other configuration items and enter the appropriate values.</td>
</tr>
<tr>
<td>IP Address</td>
<td>Define the IP address.</td>
<td></td>
</tr>
<tr>
<td>Subnet Mask</td>
<td>Define the subnet mask.</td>
<td></td>
</tr>
<tr>
<td>Gateway</td>
<td>Define the IP address of the gateway server.</td>
<td></td>
</tr>
<tr>
<td>DNS Server</td>
<td>Define the IP address of the DNS server.</td>
<td></td>
</tr>
</tbody>
</table>

Network configuration items
Network resources

You can define network resources for installing and updating assays, and for sharing assay tube lots. These resources can also be used for backing up results.

In this section
Defining network resources (114)
Using the share lot function (115)

Defining network resources

To define the network resources, enter the required information.

Settings > Install Source

Before you can define network resources, obtain the following information:

- Folder Path
- Server name (IP address if you intend to use FTP)
- User name and password for the specific account

You can define one of the following options.
(You can only use IP addresses for FTP servers. Share servers use IP addresses and host names).

<table>
<thead>
<tr>
<th>Network resource item</th>
<th>Configuration item</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share Folder</td>
<td>Server Name</td>
<td>Used for installing new assays and saving results.</td>
</tr>
<tr>
<td></td>
<td>Folder Path</td>
<td>URI of the Share folder server.</td>
</tr>
<tr>
<td></td>
<td>User Name</td>
<td>Enter the full path using the syntax of the server.</td>
</tr>
<tr>
<td></td>
<td>Password</td>
<td>User name of the analyzer-specific account on server.</td>
</tr>
<tr>
<td>Service FTP</td>
<td>Server IP</td>
<td>Password of the analyzer-specific account on server.</td>
</tr>
<tr>
<td></td>
<td>Folder Path</td>
<td>Used for installing new assays and saving results.</td>
</tr>
<tr>
<td></td>
<td>User Name</td>
<td>Enter the full path using the syntax of the server.</td>
</tr>
<tr>
<td></td>
<td>Password</td>
<td>User name of the analyzer-specific account on server.</td>
</tr>
<tr>
<td>LAN FTP</td>
<td>Server IP</td>
<td>Password of the analyzer-specific account on server.</td>
</tr>
<tr>
<td></td>
<td>Folder Path</td>
<td>Used for installing new assays and saving results.</td>
</tr>
<tr>
<td></td>
<td>User Name</td>
<td>Enter the full path using the syntax of the server.</td>
</tr>
<tr>
<td></td>
<td>Password</td>
<td>User name of the analyzer-specific account on server.</td>
</tr>
</tbody>
</table>

Network resource configuration items
To display a message with additional information about an item, select the item and choose the Help button.

To test if the network resources can be accessed, choose the Test button.

If you are using Windows Server 2008 or above for Share Lot or network printing, do the following:

• Choose the Group policy editor option, and then choose Local Computer Policy > Computer Configuration > Windows Settings > Security Settings > Local Policies > Security Options.

• Choose the Network security: LAN Manager authentication level option and set the value to Send LM & NTLM. Use NTLMv2 session security if negotiated.

• Ensure that the share lot folder is configured to allow read and write privileges for the appropriate user account.

### Using the share lot function

The share lot function allows you to share assay tube lots between analyzers.

Depending on your setup, you can use one of the following ways to share assay tube lots:

• The advanced tools key
• The share lot function
• The exchange of lots with a DMS
Do not use different ways to share assay tube lots at the same time.

- Sharing assay tube lots (98)

Logged on with Administrator access role.

To enable the share lot function

1. Choose **Settings > Install Source > Share Lot Folder**.
   - Choose the **Server Name** item, **Folder Path** item, **User Name** item, and **Password** item and enter the required information.
   - Choose the **Use Share Lot** item and choose the **Yes** option.

2. Restart the analyzer. Log on with Administrator access role.
   - In the title bar, (SL) is displayed next to the **Main** menu.

3. Choose **Settings > Install Source > Share Lot Folder** and review the installed assays and available assay tube lots.

To disable the share lot function

1. Choose **Settings > Install Source > Share Lot Folder**. Choose the **Use Share Lot** item and choose the **No** option.

2. Restart the analyzer. Log on with Administrator access role.
   - In the title bar, (SL) is no longer displayed next to the **Main** menu.

3. Choose the **Assay Menu** option. Review the installed assays and assay tube lots.
   - You must revalidate assay tube lots that were validated previously while the share lot function was enabled.
Connections to a host system

To set up data exchange, connect the analyzer to a host system.

**In this section**
- Defining settings for host systems (117)
- About data exchange with a DMS (118)
- Connecting the analyzer to a DMS (120)

Defining settings for host systems

To define the connection to a LIS, HIS, or DMS, enter the required information.

→ Settings > Connectivity

💡 For detailed information on how to set up communication between the analyzer and a host system, contact your Roche representative.

<table>
<thead>
<tr>
<th>HIS/LIS item</th>
<th>Configuration item</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>None</td>
<td>Choose to set the analyzer to standalone mode.</td>
</tr>
<tr>
<td></td>
<td>POCT1-A (LIS)</td>
<td>Choose to connect to a HIS or LIS.</td>
</tr>
<tr>
<td></td>
<td>POCT1-A (DML)</td>
<td>Choose if you use a POCT1-A DML interface.</td>
</tr>
<tr>
<td>Server</td>
<td>Host IP address or the host name (for example “HLSPC”). FQNAME (for example host.customer.net) is not supported.</td>
<td></td>
</tr>
<tr>
<td>Port</td>
<td></td>
<td>For information about the host address and port, contact your network administrator.</td>
</tr>
<tr>
<td>Timeout</td>
<td>Timeout (in seconds) for receiving the acknowledgment from the host.</td>
<td></td>
</tr>
<tr>
<td>TLS encryption</td>
<td>Choose Yes to secure the communication between the analyzer and the HIS, LIS, or DMS.</td>
<td></td>
</tr>
</tbody>
</table>

💡 Unsecured communication may result in unauthorized access and misuse. Roche recommends enabling TLS encryption always.

Configure secure communication

Enter the certificate for the TLS encryption.
Connections to a host system

118 Connections to a host system

About disconnecting an analyzer

To disconnect an analyzer and to set it into standalone mode, choose Settings > Connectivity > Type and choose the None option.

About data exchange with a DMS

The connection to a data management system (DMS) and enabled data synchronization influences the functionality of the analyzer.

If the analyzer is connected to a DMS and data synchronization is enabled, the following functions of the analyzer are affected:

- Automatic locking
- Results review
- Lot management
- User management
- Changing your password
- Changing your badge barcode
- Analyzer settings / device configuration
- Event logs

About data exchange with a DMS (118)

Auto Send results

Choose to send results automatically to the host computer as soon as they are generated.

Automatically sent results that were received by the host cannot be resent manually.

Data Synchronization

Choose which data is exchanged with a connected DMS.

Enabled data synchronization affects analyzer functions, e.g. the local deletion of assay tube lots or local user management.

About data exchange with a DMS (118)

Conn. Interval

Time between data synchronizations.

To keep the analyzer and a connected DMS synchronized, set the connection interval as short as possible.

About data exchange with a DMS (118)

### HIS/LIS item | Configuration item | Comment
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Send results</td>
<td>Yes</td>
<td>Choose to send results automatically to the host computer as soon as they are generated.</td>
</tr>
<tr>
<td>Data Synchronization</td>
<td>Auto Send, Users, Assay Lots, Device Configuration, Log Events</td>
<td>Enabled data synchronization affects analyzer functions, e.g. the local deletion of assay tube lots or local user management.</td>
</tr>
<tr>
<td>Conn. Interval</td>
<td></td>
<td>Time between data synchronizations.</td>
</tr>
<tr>
<td>About disconnecting an analyzer</td>
<td></td>
<td>To disconnect an analyzer and to set it into standalone mode, choose Settings &gt; Connectivity &gt; Type and choose the None option.</td>
</tr>
</tbody>
</table>

About data exchange with a DMS (118)

### Settings - ADMIN

**Data Synchronization**

<table>
<thead>
<tr>
<th>Results</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Send</td>
<td>Yes</td>
</tr>
<tr>
<td>Users</td>
<td>Yes</td>
</tr>
<tr>
<td>Assay Lots</td>
<td>Yes</td>
</tr>
<tr>
<td>Device Configuration</td>
<td>Yes</td>
</tr>
<tr>
<td>Log Events</td>
<td>Yes</td>
</tr>
<tr>
<td>Information</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Cancel | Done
Contact your local DMS administrator for tasks that are disabled on the analyzer.

Changes in the DMS are only effective on the analyzer after a completed data synchronization.

**About automatic locking**

Some data received from the DMS (e.g. user data and assay tube lots) can only be applied while the analyzer is locked or no user is logged on. While such data is received and applied, you cannot unlock the analyzer.

- Locking the analyzer (59)

**About results review**

If the analyzer sends results automatically to a DMS or HL7 host, you cannot review results on the analyzer.

- Reviewing results (76)

**About lot management**

You can share assay tube lots between analyzers, if the exchange of lots is enabled.

If assay tube lots are exchanged with the DMS, you cannot delete assay tube lots on the analyzer.

- Sharing assay tube lots (98)
- Deleting assay tube lots (103)

**About user management**

If the analyzer exchanges user data with a DMS, user management is disabled on the analyzer.

- Managing users (122)

**About changing your own password**

If the analyzer exchanges user data with a DMS, users can only change their passwords based on a request from the DMS.

When requested by the DMS, you must change your password at logon.

- Changing your password (50)

**About changing your own badge barcode**

If the analyzer exchanges user data with a DMS, users cannot assign or change their badge barcodes directly on the analyzer.

- Assigning or changing your badge barcode (53)
About analyzer settings

If the analyzer accepts system settings from the DMS, the received settings override local settings. Local changes of the settings are only effective as long they are not overwritten from the DMS.

Network settings cannot be overwritten from the DMS.

About event logs

If configured, the analyzer sends events to the connected DMS.

Viewing and printing the event log (169)

Connecting the analyzer to a DMS

To connect the analyzer to a DMS, follow the procedure below.

To connect the analyzer to a DMS

1 Choose Settings > Connectivity. Choose the Type item and choose the POCT1-A (DML) option.
2 Choose the **Server Details** item:
- Choose the **Server** item, **Port** item, and **Timeout** item and enter the required information.
- Set the **TLS encryption** item to the **Yes** option.
- Configure secure communication.

For details, refer to the *cobas® Liat® Analyzer Host Interface Manual POCT1-A (DML)* or contact your Roche representative.

3 To return to the **Connectivity** screen, choose the **Done** button.

4 Choose the **Data Synchronization** item. If you want the analyzer to exchange data with the DMS, choose the corresponding item and set it to the **Yes** option.

5 To return to the **Connectivity** screen, choose the **Done** button.

6 Choose the **Conn. Interval** option and enter the time between data exchanges. Choose the **Save** button.

7 Restart the analyzer.
Managing users

You can add new users, change user information, and delete complete user accounts.

Make sure that each user has an own user account on the analyzer. Do not use shared user accounts.

If the analyzer exchanges user data with a DMS, user management is disabled on the analyzer.

About data exchange with a DMS (118)

In this section

Overview of user account access roles (122)
About user IDs and passwords (123)
Defining new users (123)
Changing user information (126)
Deleting a user account (128)

Overview of user account access roles

The access role defines which actions a user can perform on the analyzer.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Access role</th>
<th>Permitted actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>📋</td>
<td>User</td>
<td>Run authorized assays and view assay tube lots. Change own password and badge barcode.</td>
</tr>
<tr>
<td>🏛️</td>
<td>Supervisor</td>
<td>As user, plus: review results, manage users (with access role Supervisor or User), set up the analyzer (except network settings), manage assay tube lots, install assays.</td>
</tr>
<tr>
<td>🔧</td>
<td>Administrator</td>
<td>As Supervisor, plus: network configuration settings, manage all users, update assays and software, register assays and software.</td>
</tr>
</tbody>
</table>

When the analyzer is delivered to the customer, default user accounts are provided.

The user IDs shown in screenshots in this publication are for illustration purposes only. The user ID does not necessarily reflect the user's access role.
About user IDs and passwords

On the analyzer, user IDs and passwords are restricted in length and/or allowed characters.

For user IDs, the following rules apply:

• The user ID is case insensitive.
• The length of a user ID must be 1-20 characters. To avoid cut-off user IDs in the title bar, it is recommended to define short user IDs.
• The user ID must not contain any white spaces.

For passwords, the following rules apply:

• For passwords, alphanumeric characters, symbols, and/or spaces are allowed.
• The length of a password must be 4-20 characters.

About user management on a DMS

If the analyzer exchanges user data with a DMS, the following rules apply additionally:

• Make sure that the rules for user IDs and passwords on the analyzer and the DMS match.
• User IDs and passwords defined on the DMS must only consist of ASCII Printable Characters (32-126) without #96 (’ character).

Defining new users

User accounts control access to the analyzer and determine which functions the user can perform on the analyzer, including the assays the user can perform.

If your access role is Supervisor, you can define users of the User and Supervisor access role.

If your access role is Administrator, you can manage users of the Administrator, Supervisor, and User access role.

Logged on with Supervisor or Administrator access role.
Managing users

To define a new user

1. To display the User screen, do one of the following:
   - On the Main menu, choose the User button.
   - Choose Settings > User.
   ➔ The User screen lists all defined users. The icon preceding the user ID indicates the user access role.

2. Choose the [New User] option.

3. Choose the Add button.

4. To define a user detail, select the item and choose the Enter button. Then do either of the following:
   - Enter the information and choose the OK button.
   - Select the option and choose the Select button.
   1 To avoid cut-off user IDs in the title bar, it is recommended to define short user IDs.

5. To define the password, choose the Password item. Enter the password twice.
   1 The corresponding user account is displayed in the password field.
6 If the analyzer is configured for a badge barcode authentication mode, assign and scan the badge barcode:
   • In the User Info screen, choose the Badge Barcode item. Choose the Enter button.
   • Select the Assigned option.
   • Scan the badge barcode twice.
   • New users cannot assign their badge barcodes at logon. This is only possible when a user is logged on.

7 To define which assays the user can perform, do the following:
   • Select the Allowed Assay: option and choose the Enter button.
   • On the Allowed Assay screen, select the assay you want the user to be able to perform. Choose the All button if you want to select all listed assays.
   • Choose the Change button. The values of the selected assays change from blank (not allowed) to Allowed or vice versa.
   • To keep the changes, choose the Done button.

8 On the User Info screen, choose the Add button to save the definitions.
   • By default, new users must change their passwords on first logon.
Changing user information

User accounts control access to the analyzer and determine which functions you can perform on the analyzer, including the assays the user can perform.

If your access role is User, you can change your own password and badge barcode.

If your access role is Supervisor, you can change user information of the User and Supervisor access role.

If your access role is Administrator, you can change user information of the Administrator, Supervisor, and User access role.

About locking user accounts

To prevent a user from logging on, lock the user account. To allow access to the analyzer again, unlock the user account.

Locking and unlocking user accounts is part of changing the user information. You cannot lock your own account.

You cannot lock the default Administrator account.

Logged on with User, Supervisor, or Administrator access role.

To change user information

1 To display the User screen, do one of the following:
   ▪ On the Main menu, choose the User button.
   ▪ Choose Settings > User.

2 Select a user entry.
   ▪ If you are logged on with Administrator or Supervisor access role, all currently defined users of the same access role or lower are listed.
   ▪ If you are logged on with User access role, your own user account is listed only.
   The icon preceding the user ID indicates the user access role.
3 Choose the Info button.

4 To change the password of a user, do the following:
   - Select the Password item and choose the Change button.
   - Enter your own password (i.e., the password of the changing user).
   - Enter the password of the user to be changed twice.
   - The corresponding user account is displayed in the password field.

5 To lock a user, select the Locked item. Select the Yes option and choose the OK button.
   - Locked users cannot log on to the analyzer.
   - To unlock a user, change the Locked item to the No option.

6 To change a user detail, select the item and choose the Change button. Then do either of the following:
   - Enter the information and choose the OK button.
   - Select the option and choose the Select button.
   - If you set the Change PW item to the On next login option, the user must change the password when logging on the next time.

7 Proceed in the same way as when defining a new user.

Related topics
- Defining new users (123)
- Changing your password (50)
Deleting a user account

User accounts control access to the analyzer and determine which functions you can perform on the analyzer, including the assays the user can perform.

If your access role is Administrator or Supervisor, you can delete users of your own level and below.

Deleting a user does not affect results.

Logged on with Supervisor or Administrator access role.

To delete a user account

1. Choose Settings > User.
2. Select the user entry using the and navigation buttons.
3. Choose the Delete button.
4. On the message dialog box, choose the Yes button to confirm the deletion.
Updating the software

As part of further product development, Roche may issue updates to the analyzer software remotely or via USB key.

💡 If you are logged on with User or Supervisor access role and a message is displayed informing you that a software update is available, contact your system administrator.

If you update from the Roche remote service platform, the analyzer must be connected to a network and the Internet. Firewall is set up to allow communication with:
- Host: remoteservice.roche.com
- IP: 62.209.44.11
- Port: 443
- Protocol: TCP / SSL

Logged on with Administrator access role.

To update the software from the Roche remote service platform

1. **CAUTION!** Do not disconnect the power supply from the analyzer while updating software.

   When a software update is available, a message is displayed on the analyzer screen.

2. On the message dialog box, choose the **Yes** button.

3. Enter your password and choose the **OK** button.
   - The analyzer checks the available storage space on the analyzer. If there is not enough storage space, a message is displayed and you must make storage space available by deleting either lots or results.
4 On the Upgrade screen, when asked to do so, choose the Reboot button.
   After successful restart, the analyzer attempts to register the software automatically.

5 If automatic registration fails, you must register the software manually.

To update the software from a USB key

1 CAUTION! Do not disconnect the power supply from the analyzer while updating software.

While on the Main menu, insert the USB key at the rear of the analyzer.

2 On the message dialog box, choose the OK button.

3 Enter your password and choose the OK button.
   The analyzer checks the available storage space on the analyzer. If there is not enough storage space, a message is displayed and you must make storage space available by deleting either lots or results.
4 When a message is displayed if you want to update the software, choose the Yes button.

5 Follow the dialog box: “Please remove the USB drive, wait 5 seconds and hit <OK> to continue.”
   ➔ The software upgrade completes. This process can take several minutes.

6 Do one of the following:
   • When a message indicating a successful upgrade is displayed, choose the Reboot button and wait until the analyzer has restarted.
   • When a message indicating an unsuccessful upgrade is displayed, choose the OK button to return to the Main menu. Reboot the analyzer and repeat steps 1 to 6.

7 If a message indicating a config data mismatch is displayed, do the following:
   • On the Init/Get System State Status dialog box, choose the OK button.
   • On the Config Data Mismatch dialog box, choose the Yes button.
   • On the Message dialog box, choose the Reboot button.

8 After successful restart, you are prompted to calibrate the screen by following the on-screen instructions.

9 Log on to the analyzer.
   • The analyzer attempts to register the software automatically. If automatic registration fails, you must register the software manually.
     You can check the version of the updated software by choosing Main > Settings > Versions.

Related topics
   • Registering the software (132)
   • Exporting and deleting results (82)
   • Deleting assay tube lots (103)
Registering the software

Updated software must be registered within 30 days.

You can use the unregistered software during the registration period, but once this period has expired, the analyzer is locked for testing.

💡 If the analyzer is connected to the Roche remote service platform, the analyzer automatically tries to register the software. If this automatic registration fails, a message is displayed and a user must register the software manually.

☐ Logged on with Administrator access role.

To register the software manually

1. Start the registration process.
   - If a message is displayed, choose the Activate button.
   - If no message is displayed, on the Main menu, choose Settings > System Info.

2. From the System Info screen, note the registration code.

3. Call your Roche Support and provide the registration code.

4. The Roche Support issues an activation code.

5. On the System Info screen, choose the Activate button.
6 Enter or scan the activation code and choose the **OK** button.

7 When a message indicating successful software activation is displayed, choose the **OK** button.
Viewing software and hardware information

For troubleshooting reasons, it may be necessary to check versions and IDs of the installed hardware and software elements.

In this section
- Viewing information about the analyzer and software (134)
- Viewing system information (136)

Viewing information about the analyzer and software

For troubleshooting or other reasons, you may be asked to provide information about the analyzer and installed software.

You access information about the analyzer by choosing Settings > About Device, and then selecting one of the options on the menu.
### Menu options

<table>
<thead>
<tr>
<th>Menu options</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Versions</td>
<td>For troubleshooting, you may be asked to check the versions of the installed software components and assays. Screenshots in this publication are for illustration purposes only.</td>
</tr>
<tr>
<td>Copyright</td>
<td>Copyright information about analyzer and software, including trademark information.</td>
</tr>
<tr>
<td>Intended Use</td>
<td>The intended use of the software and the analyzer.</td>
</tr>
<tr>
<td>Open Source</td>
<td>Information about open source and commercial software.</td>
</tr>
<tr>
<td>Manufacturing Information</td>
<td>Manufacturing-related information about the analyzer.</td>
</tr>
</tbody>
</table>

### Versions

<table>
<thead>
<tr>
<th>Version</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software Rev.</td>
<td>3.2.0.3254</td>
</tr>
<tr>
<td>OS Unit</td>
<td>3.2.0.3245</td>
</tr>
<tr>
<td>Package (DLL)</td>
<td>3.2</td>
</tr>
<tr>
<td>Base Board</td>
<td>2.0.3.3216</td>
</tr>
<tr>
<td>Motor Board</td>
<td>1.1.0.3016</td>
</tr>
<tr>
<td>Thermal Board</td>
<td>1.1.0.3016</td>
</tr>
</tbody>
</table>

### Copyright

*Copyright Information about analyzer and software, including trademark information.*

*Copyright © 2017, 2018 by Hoffmann-La Roche Ltd.
All rights reserved.

The cobas® Liat® software is protected by contract, law, copyright laws, and international treaties.

The cobas® Liat® software is licensed for use.

### Intended Use

*The intended use of the software and the analyzer.*

*The cobas® Liat® software provides workflow management for the in vitro diagnostic medical device cobas® Liat® Analyzer.*

### Open Source

*Information about open source and commercial software.*

*The cobas® Liat® software might contain components or modules that are Open Source or Commercial Software programs. For copyright and other notices and licensing information regarding such Software programs included with the cobas® Liat® software, please use the USB key which can be ordered through Roche.

The cobas® Liat® Analyzer and the cobas® Liat® software as a whole, may form a regulated device in...

### Manufacturing Information

*Manufacturing-related information about the analyzer.*

*Roche Molecular Systems, Inc.
1003 US Highway 322 South
Branchburg, NJ 08876
USA
Made in Switzerland
Roche Diagnostics GmbH*
Viewing system information

When installing or updating the software or for troubleshooting reasons, you may have to know the IDs of your analyzer and its installation or activation dates.

→ **Settings > System Info**

<table>
<thead>
<tr>
<th>Version and ID item</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial #</td>
<td>Defined by Roche.</td>
</tr>
<tr>
<td>MAC Address</td>
<td>Network interface card defined by manufacturer of main board.</td>
</tr>
<tr>
<td>Service Due Date</td>
<td>Date for service reminder, Roche recommends returning the analyzer for service every 5 years.</td>
</tr>
<tr>
<td>Last Installation</td>
<td>Date of last software installation/update. yyyy-mm-dd</td>
</tr>
<tr>
<td>Registration code</td>
<td>Software registration code needed for software activation (This information is only displayed if the currently installed software has not been activated.)</td>
</tr>
<tr>
<td>Activation date</td>
<td>Date when the software was activated.</td>
</tr>
</tbody>
</table>

System elements
Maintenance

In this chapter

Quality control. ........................................... 139

Maintenance and calibration ....................... 140
  About self-check .................................... 140
  About auto monitoring ......................... 140
  About auto adjustment .......................... 141
  About service ................................. 141
  Calibrating the touch screen............. 142
  Cleaning the analyzer ......................... 142
    Cleaning the outside of the analyzer .... 144
    Cleaning spillages or leakages from an assay tube. ................................. 145
Quality control

Internal control
Internal Process Control (IPC) is included in every assay tube. It verifies the adequate processing of the sample. The IPC passes if sample purification and target amplification meet validated acceptance criteria.

Quality control kits
Quality control kits for each cobas® Liat® Assay are available from Roche. The quality control kits contain positive and negative control sample materials. The process of running positive and negative controls is similar to the process for adding lots.

See Adding an assay tube lot (98) and refer to the cobas® Liat® Assay package insert or the Instructions for Use for detailed instructions.

NOTICE

Additional QC testing
Additional QC testing is not required by the manufacturer. Quality control should be run as a patient sample if additional quality control testing is performed at a site.
Maintenance and calibration

An operator is not required to perform any maintenance, other than touch screen calibration.

In this section
- About self-check (140)
- About auto monitoring (140)
- About auto adjustment (141)
- About service (141)
- Calibrating the touch screen (142)
- Cleaning the analyzer (142)

About self-check

The analyzer performs self-diagnostics during startup (initialization) and utilizes an advanced error diagnostics system to monitor the analyzer's performance during an assay. Under normal operation, the analyzer alerts the operator if a malfunction or error is detected.

The analyzer requires no adjustment or calibration from the operator.

About auto monitoring

There is an automatic daily restart programmed for 3 AM local time (once your settings have been updated), which helps to maintain the health of your analyzer.

The analyzer has a built-in auto monitoring system to ensure that it is functioning optimally at all times. During monitoring, you may see informational messages displayed.

Choose the No button to start the restart process. Choose the Yes button to effect a 60-second delay. After 60 seconds, another notification appears and allows for a final opportunity to delay for an additional 60 seconds before automatically restarting the analyzer. Follow the on-screen instructions, and the analyzer restarts.
About auto adjustment

The analyzer periodically performs automatic adjustment. During auto adjustment, **AutoCal** is displayed on the title bar. If you choose the **Run Assay** option at this time, the message “AutoCal started. This could take up to a minute.” is displayed. Choose the **OK** button to close this message. Wait until **AutoCal** is no longer displayed in title bar.

About service

Contact your local Roche representative if you have questions regarding the analyzer, its service needs, or if you have other questions.

⚠️ **CAUTION**

**Electrical hazards**

Only a qualified Roche representative can service the analyzer. Disassembling the analyzer could result in electrical hazards.

- Never attempt to repair or adjust the analyzer yourself.
- Contact your local Roche representative if the analyzer fails to operate properly.
Calibrating the touch screen

If you find that the analyzer activates a different item to the one you just tapped, calibrate the touch screen.

.logged on with Supervisor or Administrator access role.

To calibrate the touch screen

2. Choose the Select button.
3. Follow the instructions on the screen.
4. When calibration is complete, tap the screen to confirm the new settings or wait 30 seconds to discard the change.

Cleaning the analyzer

- Keep the touch screen clean from excessive fingerprints and moisture by gently wiping it with a soft, lint-free cloth.
- The exterior of the analyzer and front buttons can also be cleaned using a soft lint-free cloth moistened with either 70% isopropanol or 5-10% bleach solution. If bleach is used, it must be wiped twice using 70% isopropanol to remove all bleach residues.
- Periodically check the rear vent and bottom of the analyzer for excessive dust or debris.
- When prompted by the message “Use cleaning tool” on the screen, use the provided cleaning tool following the instructions included with the cleaning tool kit.

Safety
- Make sure that you are familiar with the safety instructions in Safety instructions (21).
CAUTION

Electric shock
Spraying or applying liquid to the analyzer or the power supply may damage the analyzer or pose an electrical hazard.

- Do not spray or apply liquid directly on the analyzer or the power supply.
- Do not attempt to clean the interior of analyzer through the vents.
- To clean the tube chamber, only use the cobas® Liat® Cleaning Tool when prompted by the analyzer.

NOTICE

Damage to the analyzer due to use of unsuitable cleaning materials
Using unsuitable cleaning materials can damage the touch screen and other surfaces.

- Only use the supplied cleaning tool when prompted by the message. Do not attempt to clean the tube chamber of the analyzer with anything other than the cleaning tool kit.
- Do not use harsh, abrasive cleaners or wipes.

In this section

Cleaning the outside of the analyzer (144)
Cleaning spillages or leakages from an assay tube (145)
Cleaning the outside of the analyzer

Keeping the analyzer clean prevents contamination and ensures trouble-free operation.

- Soft lint-free cloth
- 70% isopropanol or 5-10% bleach solution

> To clean the touch screen

1. Wipe the touch screen gently with a soft lint-free cloth.

> To clean the front buttons and the exterior of the analyzer

1. Moisten a lint-free cloth with either 70% isopropanol or 5-10% bleach solution.
2. Gently wipe the surfaces as required.
3. If you used bleach solution, wipe the affected areas twice with a fresh lint-free cloth moistened with 70% isopropanol to remove all bleach residues.
Cleaning spillages or leakages from an assay tube

In the unlikely event of a spillage or leak of an assay tube, special precautions apply because the tube contains various potentially biohazardous materials and hazardous chemicals.

⚠️ CAUTION

Contamination of cleaning tool
Do not use the cleaning tool for biohazardous contamination. The cleaning tool does not decontaminate the analyzer, but becomes contaminated itself.

- In case of spillages or leakages from an assay tube follow the procedure below.

▶ To deal with a leak from an assay tube

1. Dispose of the assay tube in accordance with the disposal policy of your institution and according to local regulations.

2. If the leak happened inside the analyzer, stop using the analyzer and immediately contact your Roche representative for further instructions.

3. Follow laboratory best practices.
   - Follow Good Laboratory Practice for working with biohazardous materials and hazardous chemicals.
   - Refer to the appropriate assay tube Safety Data Sheet and package insert or the Instructions for Use for assay-specific information.
Troubleshooting

In this chapter

8 Troubleshooting

About troubleshooting .................................. 149
List of error messages ................................. 150
Generating a backup for troubleshooting purposes 168
Viewing and printing the event log ................. 169
Resetting the lost default administrator password .. 170
Cleaning the window of the barcode reader ........ 172
Resolving a tube entry door error before the start of a run ................................................. 173
Resending results manually ............................ 174
Restarting an unresponsive analyzer ................. 175
About troubleshooting

The analyzer monitors its operation and logs abnormal events. Based on the severity, the analyzer tries to recover or to fix the error while running. If the situation cannot be resolved, the analyzer stops.

In many situations, error messages are displayed on the screen. Read them carefully and follow the instructions provided in them.

Roche support

If you have any questions or problems, contact your Roche representative with the following analyzer information ready:

- Analyzer serial number. You find it on the product label at the back of the analyzer.
- Assay name
- Run number
- Error message and code (if displayed)
- Maintenance contract number (as applicable)
- System diagnostic information, using the Diagnostic Backup function of the advanced tools key

For Roche Support in the U.S., call the following number: 1-800-800-5973.
List of error messages

Error messages are generated in exceptional situations. They describe the issue and provide information on how to resolve the situation.

Software error codes for the cobas® Liat® Analyzer are displayed in hexadecimal system, in the range from “0xb01” to “0xbff”, or numbered as “Error 1” to “Error 10”.

Error messages are without codes.

Issues identified by a unique hexadecimal code are often recovered or fixed by the analyzer after restart. For some error codes, additional actions are listed in the following table. If the error persists after these actions, copy the error code and contact your Roche representative.

<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>0xb01</td>
<td>Print failed! Please contact the administrator to resolve the problem.</td>
<td>Check the printer settings and connection. For a network printer, contact your local network administrator. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb02</td>
<td>Your clock seems to be incorrect. The barcode indicates the manufacture date YYYY-MM-DD is in the future. Please correct your time. Code:(0xb02)</td>
<td>Adjust the analyzer's date and time so it's accurate. The date format is: year-month-day.</td>
</tr>
<tr>
<td>0xb03</td>
<td>Negative Control Result Rejected. Follow QC Kit Insert instructions to prepare NEGATIVE Control sample and try again. Code:(0xb03)</td>
<td>Follow QC Kit insert instructions to prepare negative control and try again.</td>
</tr>
<tr>
<td>0xb05</td>
<td>Positive Control Result Rejected. Follow QC Kit Insert instructions to prepare POSITIVE Control sample and try again. Code:(0xb05)</td>
<td>Follow QC Kit insert instructions to prepare positive control and try again.</td>
</tr>
<tr>
<td>0xb06</td>
<td>Invalid barcode: [ErrorCode] Code:(0xb06)</td>
<td>See the information on barcode scanning in this publication. Choose Scan and try again.</td>
</tr>
<tr>
<td>0xb07</td>
<td>This tube does not match the assay/lot in Step 1. Please check the tube and try again. Code:(0xb07)</td>
<td>See the information on running an assay in this publication. The assay tube barcode is scanned twice.</td>
</tr>
<tr>
<td>0xb08</td>
<td>Not a tube barcode Code:(0xb08)</td>
<td>Scan the tube barcode.</td>
</tr>
<tr>
<td>0xb09</td>
<td>This tube has already been used! You must use a new tube. Code:(0xb09)</td>
<td>An assay tube cannot be reused. Choose OK and use a new tube.</td>
</tr>
</tbody>
</table>

List of error messages
<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>0xb0a</td>
<td>Print failed! Please contact the administrator to resolve the problem. Code:(0xb0a)</td>
<td>Check the print settings and cable connections and try again. If this error continues, restart the analyzer. If error still continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb0b</td>
<td>LiatLots.xml file is old format or it is corrupted Code:(0xb0b)</td>
<td>Call Roche Service.</td>
</tr>
<tr>
<td>0xb0c</td>
<td>Liat Analyzer is not initialized, Add Lot not allowed. Code:(0xb0c)</td>
<td>Call Roche Service.</td>
</tr>
<tr>
<td>0xb0d</td>
<td>Negative control process successful, but failed to add lot to list Code:(0xb0d)</td>
<td>Call Roche Service.</td>
</tr>
<tr>
<td>0xb0e</td>
<td>Positive control process successful, but failed to add lot to list Code:(0xb0e)</td>
<td>Call Roche Service.</td>
</tr>
</tbody>
</table>
| 0xb0f  | Negative Control Result Rejected. Contact Roche Service or follow QC Kit Insert instructions to prepare NEGATIVE Control sample and try again. Code: (0xb0f) | 1. Make sure that the QC Kit is not expired.  
2. Follow QC Kit insert instructions to prepare negative control and try again.  
3. If negative control still fails, call Roche Service. |
| 0xb10  | Positive Control Result Rejected. Contact Roche Service or follow QC Kit Insert instructions to prepare POSITIVE Control sample and try again. Code: (0xb10) | 1. Make sure that the QC Kit is not expired.  
2. Follow QC Kit insert instructions to prepare positive control. Make sure that the sample was mixed and the time period elapsed, then try again.  
3. Call Roche Service. |
| 0xb11  | InstalledPackages.xml file is corrupted Code: (0xb11)                   | Choose OK and call Roche Service.                                       |
| 0xb20  | More than 500 results found. Use filters to limit your search results. Code:(0xb20) | Use filters to limit your search results or perform export and delete results to reduce the number of results. |
| 0xb21  | Graph data file was not found! Code:(0xb21)                            | Issue with assay result. Call Roche Service.                           |
| 0xb22  | Invalid datapoints in file. Code:(0xb22)                               | Issue with assay result. Call Roche Service.                           |
| 0xb23  | Graph data file is Invalid/corrupted! Code:(0xb23)                     | Issue with assay result. Call Roche Service.                           |
| 0xb24  | Unable to update the approval status Code:(0xb24)                       | Issue with assay result. Call Roche Service.                           |

List of error messages
<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>0xb30</td>
<td>Script file is missing. Call Roche Service: [full path of the script file] Code:(0xb30)</td>
<td>Choose OK and try again. If error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb31</td>
<td>&quot; + sampleIDText + &quot; + &quot; is not a valid sample ID. Sample ID cannot be a Liat Tube or Insert barcode or be empty. Please try again. Code:(0xb31)</td>
<td>Choose OK and enter or scan the sample ID again.</td>
</tr>
<tr>
<td>0xb32</td>
<td>Script has no battery power warning setting. Run not allowed. Code:(0xb32)</td>
<td>Issue with assay script file. Call Roche Service.</td>
</tr>
<tr>
<td>0xb33</td>
<td>Incorrect power warning setting, check your script. Code: (0xb33)</td>
<td>Issue with assay script file. Call Roche Service.</td>
</tr>
<tr>
<td>0xb34</td>
<td>Invalid Runtime in Script File, Abort! Code:(0xb34)</td>
<td>Choose OK and try again. If error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb35</td>
<td>No tube has been inserted! Code:(0xb35)</td>
<td>Ensure that you have fully inserted the tube. Choose OK and try again. If error continues call Roche Service.</td>
</tr>
<tr>
<td>0xb36</td>
<td>Assay aborted. Tube in place was found, but lost after about a second. Code:(0xb36)</td>
<td>Ensure that you have fully inserted the tube. Choose OK and try again. If error continues call Roche Service.</td>
</tr>
<tr>
<td>0xb37</td>
<td>Actuators not opened. Try reboot Code:(0xb37)</td>
<td>Restart the analyzer. If error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb38</td>
<td>Illegal script file selected Code:(0xb38)</td>
<td>Issue with assay run. Call Roche Service.</td>
</tr>
<tr>
<td>0xb39</td>
<td>Script Manager is offline Code:(0xb39)</td>
<td>Issue with assay run. Call Roche Service.</td>
</tr>
<tr>
<td>0xb3a</td>
<td>Unable to save the result. Code:(0xb3a)</td>
<td>Issue with assay run. Call Roche Service.</td>
</tr>
<tr>
<td>0xb3b</td>
<td>The log file is: [LogFileName] You can manually save the file through FTP Code:(0xb3b)</td>
<td>The location of the temporary log file is displayed. Ask a user with Administrator access role to get the file via FTP.</td>
</tr>
</tbody>
</table>

*List of error messages*
<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>0xb50</td>
<td>No Network connections detected. Please check your network connections. Code:(0xb50)</td>
<td>Check your cable connections, wait a few minutes and attempt to reconnect. Contact your network administrator to ensure the network settings are correct. If network is still not detected, call Roche Service.</td>
</tr>
<tr>
<td>0xb51</td>
<td>Failed to reload lots from shared folder (Network), check your network connections, re-login to reload the lots. Code:(0xb51)</td>
<td>Check your network settings, cable connections, then restart the analyzer.</td>
</tr>
<tr>
<td>0xb52</td>
<td>Volume set failed! Code:(0xb52)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb61</td>
<td>No barcode scanned! Code:(0xb61)</td>
<td>The barcode reader did not get a scan of the barcode. Choose OK and try again.</td>
</tr>
<tr>
<td>0xb70</td>
<td>Battery level too low. Plug in AC power and press OK to continue. Code:(0xb70)</td>
<td>Connect the analyzer to the power supply and choose OK to continue.</td>
</tr>
<tr>
<td>0xb71</td>
<td>Motor PCB is not responding. Code:(0xb71)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb72</td>
<td>Motor PCB has error: [FPGA/Config] Code:(0xb72)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb73</td>
<td>Photometer PCB is not responding. Code:(0xb73)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb74</td>
<td>Photometer PCB has error: [FPGA/Config] Code:(0xb74)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb75</td>
<td>Thermal PCB is not responding. Code:(0xb75)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb76</td>
<td>Thermal PCB has error: [FPGA/Config] Code:(0xb76)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb77</td>
<td>Config data fixed, please reboot. Code:(0xb77)</td>
<td>Restart the analyzer.</td>
</tr>
<tr>
<td>0xb78</td>
<td>System was unable to fix the problem, reboot and try again. Code:(0xb78)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb79</td>
<td>Current Temp={0:00.00}°C is out of operating range. Please shut down and wait for the device to stabilize between 4°C and 40°C Code:(0xb79/0xb7c)</td>
<td>Operating temperature is out of range. Switch off the analyzer. Allow the analyzer to reach suitable temperature before powering on again.</td>
</tr>
<tr>
<td>0xb7a</td>
<td>Unable to open actuators. Code:(0xb7a)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb7b</td>
<td>Unable to move entry. Code:(0xb7b)</td>
<td>Choose OK to continue or restart.</td>
</tr>
</tbody>
</table>

List of error messages
<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>0xb7d</td>
<td>You will not be able to run assays. Reboot analyzer or perform maintenance. If error persists, contact Roche Service. Code:(0xb7d)</td>
<td>Insert and remove the cleaning tool several times. Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb7e</td>
<td>An old or a corrupted setup/settings file is detected at boot. Please have your supervisor check the settings Code:(0xb7e)</td>
<td>Ask an Administrator to check the settings. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb7f</td>
<td>Internal storage space is running low. Please make more space available. Code:(0xb7f)</td>
<td>Do not run any assays until more storage is made available. Call Roche Service.</td>
</tr>
<tr>
<td>0xb80</td>
<td>Problem archiving assays results to [DIRECTORY]:[MESSAGE] Code:(0xb80)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb81</td>
<td>Problem archiving logs to [DIRECTORY]:[MESSAGE] Code:(0xb81)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb84</td>
<td>Manually move door to [position] position. Code:(0xb84)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb85</td>
<td>Unable to connect to Script Manager Code:(0xb85)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb86</td>
<td>No response from Dualport. Try reboot. Code:(0xb86)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb87</td>
<td>The application version might not work with the current embedded firmware. Code:(0xb87)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb88</td>
<td>Motor PCB firmware version expected: [FirmwareVersion] Code:(0xb88)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb89</td>
<td>Motor PCB firmware version expected: [FirmwareVersion] Code:(0xb89)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb8a</td>
<td>Motor PCB firmware version expected: [FirmwareVersion] Code:(0xb8a)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb8c</td>
<td>Missing instrument data. Contact Roche Service. Code:(0xb8c)</td>
<td>Restart the analyzer. If error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xba0</td>
<td>Photometer LUT value(s) out of range with config LUT. Reboot to try again. If error persists, Contact Roche Service. Code:(0xba0)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xba1</td>
<td>Photometer Base value(s) out of range with config Base. Reboot to try again. If error persists, Contact Roche Service. Code:(0xba1)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xba2</td>
<td>Failed to update current time to External RTC. Code:(0xba2)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
</tbody>
</table>
# Troubleshooting

<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>0xba3</td>
<td>Software upgrade is incomplete. Reboot and try again to complete the upgrade. Code:(0xba3)</td>
<td>Reboot the analyzer. If error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xba4</td>
<td>Result summary file is being used by another user and cannot be opened. Code:(0xba4)</td>
<td>Choose OK to continue. Restart the analyzer and/or the share folder server.</td>
</tr>
<tr>
<td>0xba5</td>
<td>Run #[RUN_NR] on [Date] for sample ID '[SAMPLE_ID]' incomplete, if assay has not been repeated, please repeat assay again Code:(0xba5)</td>
<td>Check the power cable connection. Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xba6</td>
<td>Folder [FolderName] could not be accessed Code:(0xba6)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xbba</td>
<td>Unable to connect to SL folder. Check your log files for further information. Code:(0xbba)</td>
<td>Check your network settings and connections. Restart and try again.</td>
</tr>
<tr>
<td>0xbbb</td>
<td>This lot is expired! Code:(0xbbb)</td>
<td>Ensure today's date is correct. Try again. If error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xbbb</td>
<td>Duplicate Lot #, already validated. Code:(0xbbb)</td>
<td>The lot has already been added and validated. You can start using this lot.</td>
</tr>
</tbody>
</table>

**List of error messages**
<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>0xbbc</td>
<td>Error connecting to USB printer. Ensure it is connected and turned on. Code:(0xbbc)</td>
<td>Ensure that USB printer is powered on and connected. Try again.</td>
</tr>
<tr>
<td>0xbbd</td>
<td>Error connecting to Network printer. Ensure it is connected and turned on. Code:(0xbbd)</td>
<td>Ensure that network printer is powered on and connected. Ensure printer settings are correct. Try again.</td>
</tr>
<tr>
<td>0xbbe</td>
<td>Invalid printer settings</td>
<td>Ensure that printer settings are correct. Try again.</td>
</tr>
<tr>
<td>0xbbf</td>
<td>Sound could not be played. Code:(0xbbf)</td>
<td>Choose OK to continue. Restart if error continues.</td>
</tr>
<tr>
<td>0xbc0</td>
<td>Failed to set SNTP! Code:(0xbc0)</td>
<td>Choose OK to continue. Restart if error continues.</td>
</tr>
<tr>
<td>0xbc1</td>
<td>There is no assay/lot list in the device. Code:(0xbc1)</td>
<td>If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xbc2</td>
<td>File missing: There is no assay/lot list in the USB drive. Code: (0xbc2)</td>
<td>First back up lots before attempting to restore lots.</td>
</tr>
<tr>
<td>0xbc3</td>
<td>Last run have detected a Config data problem/mismatch. Reboot to restart device. Code:(0xbc3)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xbc4</td>
<td>Last ReSync have problem. Reboot to restart device. Code:(0xbc4)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xbc5</td>
<td>Last ReCal have problem. Reboot to restart device. Code:(0xbc5)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xbc6</td>
<td>Invalid Reset Code entered, please try again. Code: (0xbc6)</td>
<td>The reset code was invalid. Try again. If it does not work, call Roche Service.</td>
</tr>
<tr>
<td>0xbc7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0xbc8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0xbc9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0xbca</td>
<td>The Reset Code you provided has already expired. Please start the Reset ADMIN Password process again. Code:(0xbca)</td>
<td>Choose OK and choose Password? on the login screen to start the procedure for resetting the administrator password again.</td>
</tr>
<tr>
<td>0xbf0</td>
<td>Send failed. An unknown HL error has occurred. Contact Roche Service. Code:(0xbf0)</td>
<td>There was an issue sending the result to the host, call Roche Service.</td>
</tr>
<tr>
<td>0xbf1</td>
<td>Send failed. ACK file from CME not found: [ACKFileName] Contact Roche Service. Code:(0xbf1)</td>
<td>There was an issue sending the result to the host, call Roche Service.</td>
</tr>
<tr>
<td>Code</td>
<td>Message</td>
<td>Action</td>
</tr>
<tr>
<td>---------</td>
<td>-------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>0xbf2</td>
<td>Send failed. Contact Roche Service. Code:(0xbf2)</td>
<td>There was an issue sending the result to the host, call Roche Service.</td>
</tr>
<tr>
<td>0xbf4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0xbf5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0xbf3</td>
<td>Send failed. Please check your network/Connectivity connections and settings then try again. Code:(0xbf3)</td>
<td>Check the network and connectivity connection and settings in the Settings Menu and try again.</td>
</tr>
<tr>
<td>0xbf6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error 1</td>
<td>Upgrade failed. IM Upgrade failed. Error code 1. Please contact Roche Service.</td>
<td>Call Roche Service.</td>
</tr>
<tr>
<td>[AssayName] has not been installed. Do you want to install this assay?</td>
<td>This assay has not been installed. Choose Yes to go to the Assay Menu to add the assay. Choose No to abort running the assay.</td>
<td></td>
</tr>
<tr>
<td>[AssayName]: Script file is missing. Call Roche Service.</td>
<td>Choose OK. Ensure that the tube barcode is correct and scan it again. Alternatively, manually enter the tube barcode (see the information on barcode reading in this publication). If error continues, call Roche Service.</td>
<td></td>
</tr>
<tr>
<td>[NumberOfRecords] records found. It will take some time to load. Continue?</td>
<td>Choose Yes to view the results. You may have to wait for a long time. Choose No to cancel viewing the results.</td>
<td></td>
</tr>
<tr>
<td>Access is denied. Please verify user name and password.</td>
<td>Choose OK and try again.</td>
<td></td>
</tr>
<tr>
<td>Activation code is expired. Please contact Roche in order to get a new activation code. Your registration code: [RegistrationCode]</td>
<td>Choose OK and call Roche Service.</td>
<td></td>
</tr>
<tr>
<td>Activation code is invalid!</td>
<td>Choose OK and call Roche Service.</td>
<td></td>
</tr>
<tr>
<td>Analyzer has not been initialized, Assays can not be performed.</td>
<td>Restart the analyzer. If error continues, call Roche Service.</td>
<td></td>
</tr>
</tbody>
</table>

List of error messages
## List of error messages

<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Audit log capacity has reached 100%. No further tests can be performed. Insert Advanced Tools USB and select &quot;Export and Delete audit trail.&quot;</td>
<td>Choose OK to continue.</td>
</tr>
<tr>
<td></td>
<td>AutoCal in progress. This could take up to a minute.</td>
<td>Choose OK to continue. Wait for (busy) to disappear and try again.</td>
</tr>
<tr>
<td></td>
<td>AutoCal started. This could take up to a minute.</td>
<td>Choose OK to continue. Wait for (busy) to disappear and try again.</td>
</tr>
<tr>
<td></td>
<td>Auto-Lock Time value must be between 1 and 1440.</td>
<td>Choose OK and enter a value between 1-1440.</td>
</tr>
<tr>
<td></td>
<td>Bad thermal reading. Channel=[SpecificChannelWithError]</td>
<td>Restart the analyzer. If error continues, call Roche Service.</td>
</tr>
<tr>
<td></td>
<td>Badge barcode already assigned.</td>
<td>Choose Retry to try again or Cancel to cancel.</td>
</tr>
<tr>
<td></td>
<td>Badge barcode is already assigned to another user.</td>
<td>Choose Retry to try again or Cancel to cancel.</td>
</tr>
<tr>
<td></td>
<td>Badge barcode scan mismatch.</td>
<td>Choose Retry to try again or Cancel to cancel.</td>
</tr>
</tbody>
</table>
|      | Barcode could not be read. Try again.                                    | 1. Choose OK and try again.  
  2. In case of repeated failure, clean the outside of the barcode reader window.  
  (Cleaning the window of the barcode reader (172)) |
<p>|      | Battery level too low to run this assay, plug in AC power and try again  | Connect the analyzer to the power supply to run this assay. Choose OK and try again. |
|      | Battery may have insufficient power to run this assay. Do you really want to continue? | It is suggested that you connect the analyzer to the power supply to run this assay. Choose Yes to run this assay. Choose No to cancel. |
|      | Cannot locate upgrade package                                            | Call Roche Service, if you choose OK, the analyzer can still be used. |
|      | Changes were not saved and will be lost. Do you really want to exit?     | Choose Yes to discard the new user information input. Choose No to return to the new user info screen. |
|      | Config file could not be reloaded: [ConfigFileName]                      | Restart the analyzer and if error continues, call Roche Service. |</p>
<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Connection not possible. Please verify the settings.</td>
<td>Choose OK and try again.</td>
</tr>
<tr>
<td></td>
<td>Call Roche Service.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Directory not found. Please verify the Folder Path.</td>
<td>Choose OK and try again.</td>
</tr>
<tr>
<td></td>
<td>Do you really want to delete the following user: [user id]?</td>
<td>Choose Yes to delete the user. Choose No to reject deleting the user.</td>
</tr>
<tr>
<td></td>
<td>Do you really want to restore default settings?</td>
<td>Choose Yes to reset the settings to the default settings. Choose No to keep the current setting.</td>
</tr>
<tr>
<td></td>
<td>Ensure these field(s) are not empty: Server Name, Folder Path, User Name.</td>
<td>Choose OK and try again.</td>
</tr>
<tr>
<td></td>
<td>Enter a valid assay name!</td>
<td>Choose OK and try again.</td>
</tr>
<tr>
<td></td>
<td>Enter a valid Calibration</td>
<td>Choose OK and try again.</td>
</tr>
<tr>
<td></td>
<td>Enter a valid sample ID!</td>
<td>Choose OK and try again.</td>
</tr>
<tr>
<td></td>
<td>Enter a valid User!</td>
<td>Choose OK and try again.</td>
</tr>
<tr>
<td></td>
<td>Enter the data range in valid format. MM,DD,YY-MM,DD,YY.</td>
<td>Choose OK and try again.</td>
</tr>
<tr>
<td></td>
<td>Enter the data range in valid format. MM,DD,YY.</td>
<td>Choose OK and try again.</td>
</tr>
<tr>
<td></td>
<td>Enter the data range in valid format. MMDDYY.</td>
<td>Choose OK and try again.</td>
</tr>
<tr>
<td></td>
<td>Error reading badge barcode.</td>
<td>Choose OK and try again.</td>
</tr>
<tr>
<td></td>
<td>Failed to copy upgrade files</td>
<td>Choose OK and try again.</td>
</tr>
<tr>
<td></td>
<td>Failed to delete the results. Retry, if problem persists call Roche Service.</td>
<td>Choose OK to continue.</td>
</tr>
<tr>
<td></td>
<td>Failed to open NTP0:</td>
<td>Choose OK to continue. Restart if error continues.</td>
</tr>
</tbody>
</table>

- List of error messages
### List of error messages

<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure to reset database.</td>
<td>Restart the analyzer.</td>
<td></td>
</tr>
<tr>
<td>Failure to reset date.</td>
<td>Restart the analyzer.</td>
<td></td>
</tr>
<tr>
<td>Failed to save barcode settings.</td>
<td>Retry, if problem persist call Roche Service.</td>
<td>Choose <strong>OK</strong> and try again. If error continues, call Roche Service.</td>
</tr>
<tr>
<td>File could not be saved! Check the Install source field and access level!</td>
<td>Check your install source setting and try again. If problem persist call Roche Service.</td>
<td></td>
</tr>
<tr>
<td>File was not found!</td>
<td>Choose <strong>OK</strong> to continue.</td>
<td></td>
</tr>
<tr>
<td>Hard disk drive is full.</td>
<td>Archive and delete some data.</td>
<td>Internal storage space is full. You must move or delete files to make more room in order to continue to run assays (move or delete some files).</td>
</tr>
<tr>
<td>Invalid Activation Code.</td>
<td>Choose <strong>OK</strong> and try again.</td>
<td></td>
</tr>
<tr>
<td>Invalid assay.</td>
<td>Repeat assay. If it still fails, contact Roche Service.</td>
<td></td>
</tr>
<tr>
<td>Invalid barcode:</td>
<td>Choose <strong>OK</strong> and scan again.</td>
<td></td>
</tr>
<tr>
<td>Invalid date/time entered</td>
<td>Choose <strong>OK</strong> and try again.</td>
<td></td>
</tr>
<tr>
<td>Invalid Tube</td>
<td>Ensure that the same assay tube is scanned again.</td>
<td></td>
</tr>
<tr>
<td>Invalid user ID entered:</td>
<td>Incorrect user ID entered or scanned. Choose <strong>OK</strong> and try again.</td>
<td></td>
</tr>
<tr>
<td>Invalid Password</td>
<td>Choose <strong>OK</strong> and try again.</td>
<td></td>
</tr>
<tr>
<td>It's not possible to add more than 500 users.</td>
<td>Choose <strong>OK</strong>, delete unused users, and try again.</td>
<td></td>
</tr>
<tr>
<td>Log file [LogFileName] could not be saved. Try again?</td>
<td>Choose <strong>Yes</strong> and try to save again.</td>
<td></td>
</tr>
<tr>
<td>Lot does not exist. Do you want to add this lot?</td>
<td>This lot of assay tubes has not been validated. Choose <strong>Yes</strong> to go to the Assay Menu screen to add the lot. Choose <strong>No</strong> to abort running this assay.</td>
<td></td>
</tr>
<tr>
<td>Machine name can not be empty!</td>
<td>Name of the analyzer cannot be empty. Choose <strong>OK</strong> and try again.</td>
<td></td>
</tr>
<tr>
<td>Missing RunTime folder,cannot execute Liat application</td>
<td>Call Roche Service.</td>
<td></td>
</tr>
<tr>
<td>New Lot validation not complete. Do you want to continue the validation?</td>
<td>Choose <strong>Yes</strong> to go to the Assay Menu to finish the add lot validation. Choose <strong>No</strong> to abort running the assay.</td>
<td></td>
</tr>
<tr>
<td>No connection to the server can be established. Configure secure communication.</td>
<td>Choose <strong>OK</strong>, check the connectivity settings, and try again.</td>
<td></td>
</tr>
<tr>
<td>No Events were logged.</td>
<td>For your information. Choose <strong>OK</strong>.</td>
<td></td>
</tr>
<tr>
<td>No rights to run this type of assay!</td>
<td>Ask your supervisor to add the assay to the Allow Assay list in your user profile.</td>
<td></td>
</tr>
</tbody>
</table>
## Troubleshooting

<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Out of sync Motor 3.</td>
<td>Check that the tube is inserted all the way.</td>
</tr>
<tr>
<td></td>
<td>Please input: [Server Name/IP address/Share Name/Folder Path/User name/Password!]</td>
<td>Indicated settings are empty. Choose <strong>OK</strong> and enter the specified settings.</td>
</tr>
<tr>
<td></td>
<td>Printing…</td>
<td>Choose <strong>OK</strong>. Wait for print to finish.</td>
</tr>
<tr>
<td></td>
<td>Port value must be between 1 and 65535.</td>
<td>Choose <strong>OK</strong> and try again.</td>
</tr>
<tr>
<td></td>
<td>Remove the assay tube before logging on as another user.</td>
<td>Choose <strong>OK</strong> and remove the assay tube from the analyzer.</td>
</tr>
<tr>
<td></td>
<td>Remove the tube slowly and carefully. Hit &lt;OK&gt; to continue. (Do NOT pull the tube out forcibly.)</td>
<td>Carefully pull the tube out.</td>
</tr>
<tr>
<td></td>
<td>Remove the USB key in order to continue.</td>
<td>Choose <strong>OK</strong> and remove the USB key from the rear of the analyzer.</td>
</tr>
<tr>
<td></td>
<td>Sample ID exceeds maximum length (60 chars).</td>
<td>Choose <strong>OK</strong> and try again.</td>
</tr>
<tr>
<td></td>
<td>Scanned badge barcode does not match a known user.</td>
<td>Choose <strong>OK</strong> and try again.</td>
</tr>
<tr>
<td></td>
<td>Server does not respond.</td>
<td>Check the connectivity settings and try again.</td>
</tr>
<tr>
<td></td>
<td>Server not found. Please verify the Server Name.</td>
<td>Choose <strong>OK</strong> and try again.</td>
</tr>
<tr>
<td></td>
<td>Server's certificate expired.</td>
<td>Contact the administrator of your host system.</td>
</tr>
<tr>
<td></td>
<td>Server's certificate name mismatch.</td>
<td>Check the connectivity settings or contact the administrator of your host system.</td>
</tr>
<tr>
<td></td>
<td>Server's certificate untrusted.</td>
<td>Check the connectivity settings and try again.</td>
</tr>
<tr>
<td></td>
<td>SNTP Server cannot be empty</td>
<td>Choose <strong>OK</strong> and try again, or set SNTP option to <strong>No</strong>. See the information on the system settings in this publication.</td>
</tr>
<tr>
<td></td>
<td>Some of the provided settings are incorrect. Please refer to the user manual or contact Roche Service.</td>
<td>Choose <strong>OK</strong> to continue.</td>
</tr>
<tr>
<td></td>
<td>System is busy.</td>
<td>Choose <strong>OK</strong>. Wait for <strong>(busy)</strong> to disappear and try again.</td>
</tr>
<tr>
<td></td>
<td>The Activation Code you provided has already expired. Please contact Roche Service to get a new Activation Code.</td>
<td>Choose <strong>OK</strong> and call Roche Service.</td>
</tr>
</tbody>
</table>

**List of error messages**
<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>VV-07723-01</td>
<td>The Assay ['AssayName'] version ['AssayVersion'] is not compatible with the current SW version ['SoftwareVersion']&quot;</td>
<td>Choose <strong>OK</strong>, make sure that it is the correct USB key and otherwise call Roche Service.</td>
</tr>
<tr>
<td></td>
<td>The certificate returned by the server has expired.</td>
<td>Contact the administrator of your host system.</td>
</tr>
<tr>
<td></td>
<td>The certificate returned by the server has a wrong host name.</td>
<td>Contact the administrator of your host system.</td>
</tr>
<tr>
<td></td>
<td>The current version ([AssayVersion]) for Assay ['AssayName'] is newer than the detected update ([AssayVersion]). This update will be discarded</td>
<td>Choose <strong>OK</strong>, make sure that it is the correct USB key and otherwise call Roche Service.</td>
</tr>
<tr>
<td></td>
<td>The first scanned badge barcode is not identical to the second.</td>
<td>Choose <strong>Retry</strong> to try again or <strong>Cancel</strong> to cancel.</td>
</tr>
<tr>
<td></td>
<td>The grace period for this assay has expired. Please contact Roche Service in order to activate the assay</td>
<td>Choose <strong>Activate</strong> to register and activate your assay(s) or choose <strong>Cancel</strong> to continue.</td>
</tr>
<tr>
<td></td>
<td>The grace period for this assay has expired. Please inform an Administrator to contact Roche Service to activate the assay</td>
<td>Choose <strong>OK</strong> and inform your Administrator.</td>
</tr>
<tr>
<td></td>
<td>The instrument’s Audit logs have reached 100%. No further tests can be performed. Contact your Administrator immediately.</td>
<td>Choose <strong>OK</strong> to continue.</td>
</tr>
<tr>
<td></td>
<td>The instrument’s Audit logs reached [80/90]%. Contact your Administrator.</td>
<td>Choose <strong>OK</strong> to continue.</td>
</tr>
<tr>
<td></td>
<td>The instrument’s Audit logs reached [80/90]%. To free up space, insert Advanced Tools USB drive and export audit logs.</td>
<td>Choose <strong>OK</strong> to continue.</td>
</tr>
<tr>
<td></td>
<td>The length of the password must be between 4 and 20 characters.</td>
<td>Choose <strong>OK</strong> and try again.</td>
</tr>
<tr>
<td></td>
<td>The software update package is corrupted. Please contact Roche Service.</td>
<td>Call Roche Service, if you choose <strong>OK</strong>, the analyzer can still be used.</td>
</tr>
<tr>
<td></td>
<td>The system could not find any assay script file on the USB drive</td>
<td>Choose <strong>OK</strong>, make sure that it is the correct USB key and otherwise call Roche Service.</td>
</tr>
</tbody>
</table>
### Troubleshooting

<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The system does not have enough storage to perform the assay(s) install/update</td>
<td>Internal storage space is full. Move or delete files to free space so you can continue to run assays (move or delete some files).</td>
</tr>
<tr>
<td></td>
<td>The update failed due to unknown reasons. System will be restored. Please contact Roche Service.</td>
<td>Choose OK and try again.</td>
</tr>
<tr>
<td></td>
<td>The updated '[AssayVersion]' version for Assay '[AssayName]' does not come from a valid source. This update will be discarded</td>
<td>Choose OK, make sure that it is the correct USB key and otherwise call Roche Service.</td>
</tr>
<tr>
<td></td>
<td>The upgrade is not compatible with the currently installed version.</td>
<td>Call Roche Service.</td>
</tr>
<tr>
<td></td>
<td>The validation of the software package failed</td>
<td>Call Roche Service, if you choose OK, the analyzer can still be used.</td>
</tr>
<tr>
<td></td>
<td>There was an error adding assay '[AssayName]' version '[AssayVersion]'.</td>
<td>Choose OK and try again.</td>
</tr>
<tr>
<td></td>
<td>There was an error restoring the assay '[AssayName]' version '[AssayVersion]'. Please, try reinstalling the assay.</td>
<td>Choose OK and try again.</td>
</tr>
<tr>
<td></td>
<td>There was an error updating assay '[AssayName]' to version '[AssayVersion]'. The current version will be kept.</td>
<td>Choose OK and try again.</td>
</tr>
<tr>
<td></td>
<td>Thermal error. Channel=[ChannelName]</td>
<td>Restart the analyzer. If error continues, call Roche Service.</td>
</tr>
<tr>
<td></td>
<td>This server does not support secure connectivity compatible with the Liat analyzer.</td>
<td>Contact the administrator of your host system.</td>
</tr>
<tr>
<td></td>
<td>Time zone could not be set</td>
<td>Choose OK and try again.</td>
</tr>
<tr>
<td></td>
<td>Tube entry door error. Check the door and try again or press manual button to operate the door.</td>
<td>Check the tube entry door for blockage. Retry or manually move the door to the correct positions (i.e., with the tube inserted, carefully open and close the door).</td>
</tr>
<tr>
<td></td>
<td>Tube insert time must be between 1 to 20!</td>
<td>Choose OK and try again.</td>
</tr>
<tr>
<td></td>
<td>To restart the analyzer, press the &lt;OK&gt; button. Code: [ErrorCode]</td>
<td>Record the message code and call Roche Service. Choose OK to restart.</td>
</tr>
</tbody>
</table>

List of error messages
## List of error messages

<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unable to connect to Share Folder.</td>
<td>Choose OK to continue. Restart the analyzer and/or the share folder server.</td>
</tr>
<tr>
<td></td>
<td>Unknown error Code: ([ErrorCode])</td>
<td>Record the message. Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td></td>
<td>Unknown user ID: [user ID].</td>
<td>Choose OK and try again.</td>
</tr>
<tr>
<td></td>
<td>Unregistered Assay(s) found. Please contact Roche Service to register the assay(s) within the next [NumberOfDays] days.</td>
<td>Choose Activate to register and activate your assay(s) or choose Later to continue.</td>
</tr>
<tr>
<td></td>
<td>Unregistered Assay(s) found. Please inform an Administrator to get in contact with Roche Service in order to register and activate your assay(s) within the next [NumberOfDays] days.</td>
<td>Choose OK and inform your Administrator. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td></td>
<td>Unregistered software version. Please contact an Administrator to activate the software within the next [NumberOfDays] days.</td>
<td>Choose Activate to register and activate your software or choose Later to continue.</td>
</tr>
<tr>
<td></td>
<td>Unregistered software version. Pleas contact Roche Service to activate the software within the next [NumberOfDays] days. Registration code: [RegistrationCode]</td>
<td>Choose OK and inform your Administrator. Running assays is still possible until the registration period has expired.</td>
</tr>
<tr>
<td></td>
<td>Unregistered software version. You are no longer able to run assays. Please contact an Administrator to activate the software. Registration code: [RegistrationCode]</td>
<td>Choose OK and inform your Administrator.</td>
</tr>
<tr>
<td></td>
<td>Unregistered software version. You are no longer able to run assays. Please contact Roche Service to activate the software. Registration code: [RegistrationCode]</td>
<td>Choose Activate to register and activate your software or choose Later to continue.</td>
</tr>
<tr>
<td></td>
<td>Unsaved data may be lost. Do you really want to log off the current user?</td>
<td>Choose Yes to log on. Choose No to return to the walk-by-screen.</td>
</tr>
<tr>
<td></td>
<td>Upgrade check failed. Check the documentation, correct your data, and try again.</td>
<td>Call Roche Service if error continues.</td>
</tr>
<tr>
<td></td>
<td>Upgrade failed. IM Upgrade failed. IMUpgrade did not finish in time. Please contact Roche Service</td>
<td>Call Roche Service.</td>
</tr>
</tbody>
</table>
## Hardware-related and firmware-related codes

Hardware-related and firmware-related codes are generated in case of events related to hardware or module failure during assay runs. These codes appear in the following formats:

- Prefix codes
- Hexadecimal codes

The correlation between these code formats is shown in the following table:

<table>
<thead>
<tr>
<th>Modules</th>
<th>Prefix</th>
<th>Code range</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>–</td>
<td>0x1 – 0x10</td>
</tr>
<tr>
<td>Motor</td>
<td>MO</td>
<td>0x001 – 0xFF</td>
</tr>
<tr>
<td>Thermal</td>
<td>TP</td>
<td>0x101 – 0x1FF</td>
</tr>
<tr>
<td>Photometer</td>
<td>PM</td>
<td>0x201 – 0x2FF</td>
</tr>
<tr>
<td>Hardware</td>
<td>HW</td>
<td>0x301 – 0x3FF</td>
</tr>
<tr>
<td>File Transfer</td>
<td>FT</td>
<td>0x401 – 0x4FF</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>MI</td>
<td>0x501 – 0x5FF</td>
</tr>
<tr>
<td>CE / Script</td>
<td>CE</td>
<td>0xA01 – 0xAFF</td>
</tr>
<tr>
<td>Unsolicited message</td>
<td>UM</td>
<td>0xF01 – 0xFFF</td>
</tr>
</tbody>
</table>

Prefix codes appear as “XX-YYYYY-YYY”. The following rules apply:

- “XX” denotes the affected module (e.g., MO).
- The 5th number (XX-YYYYY-YYY) defines the severity of the issue.

### List of error messages

<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>165</td>
<td>Upgrade failed. IM Upgrade failed. IM Upgrade does not exist. Please contact Roche Service.</td>
<td>Call Roche Service.</td>
</tr>
<tr>
<td>166</td>
<td>Upgrade failed. Missing RunTime folder. Please contact Roche Service.</td>
<td>Call Roche Service.</td>
</tr>
<tr>
<td>167</td>
<td>Upgrade failed. Something’s wrong. Storage Card\CobasRunTime\ exist. Please contact Roche Service.</td>
<td>Call Roche Service.</td>
</tr>
<tr>
<td>168</td>
<td>User already exists: Do you want to edit the user?</td>
<td>Choose Yes to update/overwrite the existing user's information. Choose No to cancel and return to the new user screen.</td>
</tr>
<tr>
<td>169</td>
<td>User Id and Password can not be empty!</td>
<td>Choose OK and try again.</td>
</tr>
<tr>
<td>170</td>
<td>Year must be between 1980 to 2080</td>
<td>The year entered is not valid. Choose OK and try again.</td>
</tr>
<tr>
<td>171</td>
<td>You do not have the access rights to add this assay.</td>
<td>Ask your supervisor to add the assay to the Allow Assay list in your user profile.</td>
</tr>
<tr>
<td>172</td>
<td>You need to change your password to log on.</td>
<td>Choose OK and try again.</td>
</tr>
<tr>
<td>173</td>
<td>Your system time is not correct. Please correct it first in order to update the software.</td>
<td>Choose OK and navigate to the System Settings screen. Set the time to the current time and try again to install the software package.</td>
</tr>
</tbody>
</table>
List of error messages

A severity of 4 or less (e.g., MO-00071-000) is a **Warning** that can be self-corrected by the analyzer. No action is necessary. The result generated from the assay run is valid.

A severity of 5 or greater (e.g., MO-00075-000) is an **Error**, and aborts the assay run. If the issue recurs systematically, contact Roche Service.

Some hardware-related and firmware-related codes are listed in the following table:

<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x1</td>
<td>Config file on SD card has error Code:(0x1)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0x2</td>
<td>Embedded PCB initialization failed: [Motor/Thermal/Photo] [FPGA/config] Code:(0x2)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0x3</td>
<td>Motor Initialization failed (0x3)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0x4</td>
<td>[Motor/Thermal/Photo] system serial numbers do not match with the one on SD Card Code:(0x4)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0x5</td>
<td>Embedded PCB config data mismatch Code:(0x5)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0x6</td>
<td>Thermal Initialization failed Code:(0x6)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0x7</td>
<td>Read all temperature command failed Code:(0x7)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0x8</td>
<td>Failed to shutdown thermal Code:(0x8)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xa</td>
<td>Motion calibration LUT failed Code:(0xa)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xb</td>
<td>Config LUT values are invalid (CompOn) Code: (0xb)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xc</td>
<td>Motion calibration call failed Code:(0xc)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xd</td>
<td>Motion calibration value(s) out of range with config LUT Code:(0xd)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xe</td>
<td>Photometer LUT value(s) out of range. Reboot after initialization completes. Contact Roche Service if error persists. Code:(0xe)</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xf</td>
<td>Cleaning of photometer is recommended. Shutdown the instrument and use the cleaning tool. Follow instructions from &quot;Cleaning Tool Guide&quot;. Code:(0xf)</td>
<td>Use the provided cleaning tool following the instructions included with the cleaning tool kit. Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0x10</td>
<td>Cleaning of photometer is needed. Shutdown the instrument and use the cleaning tool. Follow instructions from &quot;Cleaning Tool Guide&quot;. Code:(0x10)</td>
<td>Use the provided cleaning tool following the instructions included with the cleaning tool kit. Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
</tbody>
</table>
Assay failure codes and assay pattern codes

**Assay failure codes** are generated for invalid test results.

**Assay pattern codes** are generated for abnormal PCR curve patterns. These codes may appear in assay runs which show invalid results.

Hardware-related and firmware-related codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x503</td>
<td>To restart the analyzer, press the &lt;OK&gt; button. Code:0x503</td>
<td>Call Roche Service. Press OK to reboot.</td>
</tr>
<tr>
<td>0x504</td>
<td>To restart the analyzer, press the &lt;OK&gt; button. Code:0x504</td>
<td>Call Roche Service. Press OK to reboot.</td>
</tr>
<tr>
<td>0x505</td>
<td>To restart the analyzer, press the &lt;OK&gt; button. Code:0x505</td>
<td>Call Roche Service. Press OK to reboot.</td>
</tr>
<tr>
<td>0xF31 0xF32</td>
<td>Assay Aborted Due to Error Code [0xF31/0xF32] Analyzer is not level. Place analyzer on level surface.</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xF33</td>
<td>Assay Aborted Due to Error Code 0xF33 Tube in Place Lost.</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xF61</td>
<td>Assay Aborted Due to Error Code 0xF61 Bad thermal reading. Channel=[Channel Nr.]</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xF62</td>
<td>Assay Aborted Due to Error Code 0xF62 Thermal error. Channel=[Channel Nr.]</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xF91</td>
<td>Assay Aborted Due to Error Code 0xF91 [Motor/Thermal/Photometer] config file load failed</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xF92</td>
<td>Assay Aborted Due to Error Code 0xF92 [Motor/Thermal/Photometer] external RAM error</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xF93</td>
<td>Assay Aborted Due to Error Code 0xF93 [Motor/Thermal/Photometer] serial flash error</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xF94</td>
<td>Assay Aborted Due to Error Code 0xF94 Thermal runaway (enable). Channel=[Channel Nr.]</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
<tr>
<td>0xF95</td>
<td>Assay Aborted Due to Error Code 0xF95 Thermal runaway (disable). Channel=[Channel Nr.]</td>
<td>Restart the analyzer. If this error continues, call Roche Service.</td>
</tr>
</tbody>
</table>

Assay failure codes and assay pattern codes are assay-specific. Refer to the cobas® Liat® Assay package insert or the Instructions for Use for more information. Contact Roche Service if the failure persists.
Generating a backup for troubleshooting purposes

If you encounter a problem, Roche recommends generating a backup, which you then can send to your Roche representative.

⚠️ CAUTION

Data security

Data backed up by the advanced tools key is stored as plain text files and so their content is accessible to unauthorized persons.

- Ensure that you store backed up data safely and securely so that it is not accessible by unauthorized persons.

The diagnostic backup contains all relevant data required to perform diagnostics. Once you have generated this backup using your advanced tools key, you must prepare it on a Windows computer for transfer.

- For information on the advanced tools key, see the cobas® Liat® Advanced Tools Key Guide.
Viewing and printing the event log

Certain error messages are recorded in a log file, which you can view and print.

- If configured, the analyzer sends events to a connected DMS.
- About data exchange with a DMS (118)

Logged on with Supervisor or Administrator access role.

To view the event log

   - Large event logs may take some time to load.

2. To scroll through the event log, do the following:
   - To scroll continuously, use the and navigation buttons.
   - To scroll by page, use the Left and Right navigation buttons.

3. To print the event log, choose the Print button.
Resetting the lost default administrator password

If you have lost the password of the default administrator account ADMIN, you can apply for a new one with your Roche representative.

- Defined account with Administrator access role.

**To reset your default administrator password**

1. On the login screen, choose the Password? button.

2. On the message dialog box, choose the Yes button to confirm that you no longer have access to the administrator password.
   - An eight-digit key is displayed, which is valid for 24 hours.

3. Make a note of the key displayed in the message.
   - Do not tap the screen until you have received the reset code.

4. Contact your Roche representative and request a password reset.
   - You must provide proof of identity and the eight-digit key that was generated by the analyzer.

5. After successful verification, you receive an eight-digit reset code, which is valid for 24 hours.

6. On the message dialog box, choose the OK button.

7. On the Enter Reset Code screen, enter the code provided by your Roche representative.

8. Choose the OK button.
   - If the code is valid, the Enter Password screen is displayed.
9 Enter a new administrator password.

10 Choose the OK button. ➞ A success message is displayed.
Cleaning the window of the barcode reader

Dried residue on the outside of the barcode reader window may cause repeated failure to scan barcodes. Clean the window to ensure trouble-free operation.

⚠️ CAUTION
Electric shock
- Do not spray or apply liquid directly on the analyzer.

NOTICE
Damage to the analyzer due to use of unsuitable cleaning materials
Using unsuitable cleaning materials can damage the window of the barcode scanner.
- Do not use harsh, abrasive cleaners or wipes.

☐ Soft lint-free cloth
☐ 70% isopropanol

• Repeated failure to scan barcodes.

To clean the window of the barcode reader

1. Switch off the analyzer.
2. Moisten a lint-free cloth with 70% isopropanol.
3. Gently wipe the outside of the barcode reader window.
Resolving a tube entry door error before the start of a run

If you insert the assay tube just at the end of the tube insert time, a tube entry door error may occur.

- Assay tube is inserted in analyzer.
- Error message “Tube entry door error. Check the door and try again or press manual button to operate the door.” is displayed.

To resolve a tube entry door error before the start of a run

1. Manually remove the assay tube from the analyzer.
2. On the message dialog box, choose the Manual button. Choose the OK button.
3. To run the assay, continue with step 9 of (168).
Resending results manually

If the analyzer is configured to send results automatically to a host, but the transmission fails, you have to review the results on the analyzer and resend them manually.

On the Results screen, results that were sent to the host, but not received by the host, are marked with.

- Automatic sending of results failed.
- Logged on with Supervisor or Administrator access role.

To resend results manually

1. On the main menu, choose the Results option.

2. On the Results screen, review and send the results as described in (76).
Restarting an unresponsive analyzer

If the analyzer becomes unresponsive, power off and restart it.

To restart an unresponsive analyzer

1. If the analyzer is unresponsive, press the power button and hold it down for 5–10 seconds until the analyzer powers off.

2. Wait for about 10 seconds.

3. To restart the analyzer, press the power button again.

4. Follow the instructions on the screen.
Restarting an unresponsive analyzer
Specifications

In this chapter

Technical data .................................................. 179
Technical characteristics ................................. 179
Environmental conditions ............................... 179
Storage and transport conditions ....................... 180
Standard supplies ........................................ 180
Printer ............................................................ 181
Table of contents
Technical data

To ensure trouble-free operation, ensure that you use the components listed below and that the conditions mentioned in this section are met.

In this section
- Technical characteristics (179)
- Environmental conditions (179)
- Storage and transport conditions (180)
- Standard supplies (180)
- Printer (181)

Technical characteristics

The analyzer has the following technical characteristics:

<table>
<thead>
<tr>
<th>Analyzer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>User interface</strong></td>
</tr>
<tr>
<td><strong>Internal storage capacity</strong></td>
</tr>
<tr>
<td><strong>Barcode reader</strong></td>
</tr>
<tr>
<td><strong>Connectivity port</strong></td>
</tr>
<tr>
<td><strong>Main connection</strong></td>
</tr>
<tr>
<td><strong>Power consumption</strong></td>
</tr>
<tr>
<td><strong>Safety class</strong></td>
</tr>
<tr>
<td><strong>Dimensions (L x W x H)</strong></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
</tr>
</tbody>
</table>

Environmental conditions

For operation, the following environmental conditions must be met:

<table>
<thead>
<tr>
<th>Analyzer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Temperature range</strong></td>
</tr>
<tr>
<td><strong>Relative humidity</strong></td>
</tr>
<tr>
<td><strong>Maximum altitude</strong></td>
</tr>
</tbody>
</table>
Other environmental conditions

- Indoor use only
- Horizontal installation space
- Dust-free environment with adequate ventilation
- No direct sunlight
- No perceptible vibration
- No equipment generating electromagnetic waves in the near vicinity
- No machines discharging ultrahigh frequencies (e.g., electric discharger)

Storage and transport conditions

For storage and transport, the following ambient conditions must be met:

<table>
<thead>
<tr>
<th>Analyzer</th>
<th>Temperature range</th>
<th>Storage relative humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-20 °C to +60 °C (-4 °F to +140 °F)</td>
<td>10% to 95% (non-condensing)</td>
</tr>
</tbody>
</table>

Standard supplies

For trouble-free operation, use the following standard supplies:

- **Name**
  - cobas® Liat® Analyzer
  - cobas® Liat® Advanced Tools Key
  - Power supply
  - Power cable
  - cobas® Liat® Assay Tube
    - Read the package insert or the Instructions for Use for detailed product data and usage limitations.
  - cobas® Liat® Cleaning Tool Kit

- **Standard supplies**

The assay tubes are specific to each assay. The Roche catalog of assays is constantly expanding. Contact your Roche representative for a complete list of cobas® Liat® assays available for IVD use.
Printer

A standard PCL compatible printer (laser or inkjet) that can be connected either to the USB port or via data network.

💡 PCL 3 GUI is not supported.

Reports printed on an inkjet printer can be damaged by moisture or liquid. It is therefore recommended to use a laser printer.
Appendix

10 Index .......................................................................................................................... 185
Index

A
Abbreviations, 10
Aborting assays, 72
Access roles, 122
Adding
- assay tube lots, 98
Addresses, 6
Adjustment
- automatic, 141
Analyzer
- cleaning outside, 144
- functions, 37
- operating elements, 40
- setting up, 87
- starting, 47
- switching off, 63
- unresponsive, 175
Approvals, 5
Assay tube lots
- adding, 98
- deleting, 103
- sharing, 98, 115
Assay tubes, 37
Assays
- aborting, 72
- adding tube lots, 98
- deleting tube lots, 103
- installing from local source, 95
- installing from remote service platform, 93
- installing from USB key, 90
- overview, 42
- performing, 68
- registering, 96
- uninstalling, 104
- updating from remote service platform, 93
- updating from USB key, 90
Audit trail, 38
Authentication modes, 110
Auto adjustment, 141
Auto monitoring, 140
Auto-lock function, 59
Automatic adjustment, 141
Automatic restart, 140

B
Backup for troubleshooting, 168
Badge barcode
- assigning, 53
- changing, 53
- removing, 53
- replacing, 53
Barcode reader, overview, 40
Barcode standards
- configuring, 110
- supported, 57
Barcodes
- scanning, 57
- supported, 57
Buttons
- function, 40
- navigation, 40

C
Calibration
- touch screen, 142
Changing user information, 126
Characteristics, technical, 179
Checks, automatic, 38
Cleaning
- outside of analyzer, 144
- spillages, 145
- touch screen, 144
Code
- assay failure, 167
- assay pattern, 167
- firmware error, 165
- hardware error, 165
- software error, 150
Conditions
- environmental, 179
- for operation, 179
- storage, 180
- transport, 180
Contact, 6
Controls, 106
Conventions used in this publication
- abbreviations, 10
- product names, 9
- symbols, 9
Copyright, 5

D
Data management system
- about data exchange, 118
- connecting analyzer, 120
Data management system connections, 117
Defining
- HIS, LIS, DMS connections, 117
- network, 113
- network resources, 114
- system, 108
- users, 123
- values, 88
Definitions
- HIS, LIS, DMS connections, 117
Index

- network, 113
- network resources, 114
- system, 108
Deleting
- assay tube lots, 103
- users, 128
Deleting results, 82
Disposal, analyzer, 23
DMS connections, 117
Documents, supporting, 4

E
Edition notice, 4
Entering text and numbers, 56
Environmental conditions, 179
Error
- assay, 167
- firmware, 165
- software, 150
- tube entry door, 173
Event log, 169
Exporting results, 82

F
Feedback, 6
Filtering results, 80
Flap, for assay tubes, 41
Function buttons, 40
Functions, analyzer, 37

G
Graphs, 75

H
HIS connections, 117
Hospital information system connections, 117

I
IDs, system elements, 136
Information, additional, supporting, 4
Installation, 29
Installing
- assays from local source, 95
- assays from remote service platform, 93
- network printer, 32
- USB printer, 31
Installing assays
- from USB key, 90
Instrument
- See Analyzer
Instrument approvals, 5

L
Labels, on analyzer, 23
Laboratory information system connections, 117
LIS connections, 117
List of messages, 150
Locking the analyzer manually, 59
Locking users, 126
Log files, 169
Logging on, 48
- with badge barcode, 49
- with user ID, 48
Lots
- control results, 106
- information, 105

M
Maintenance, 140
Messages, 150
Monitoring, 140

N
Navigation buttons, 40
Network definitions, 113
Network resources, 114
New in version 7.2, 13
New in version 8.0, 11
Numbers, entering, 56

O
Operating elements, 40
Overview
- assays, 42
- barcode reader, 40
- results, 75
- touch screen, 43

P
Password
- changing, 50
- changing anytime, 50
- changing at logon, 52
- resetting for Administrator, 170
Passwords
- about, 123
Patents, 5
Performing
- assays, 68
Power switch, 41
Powering on, 47
Index

Printer
- compatibility, 181
- installing network, 32
- installing USB, 31
Printing
- lot control results, 106
- lot information, 105
Product names, 9

Q

Quality control, 139

R

Reading barcodes, 57
Registering
- assays, 96
- software, 132
Remote service platform, 93
Reports, 75
Resetting Administrator Password, 170
Results
- deleting, 82
- exporting, 82
- filtering, 80
- lot controls, 106
- overview, 75
- reviewing, 76
- sorting, 80
Reviewing results, 76
Revision history, 3
Running assays, 68

S

Safety
- classification, 21
- disposal, 23
- labels, 23
- summary, 21
Scanning barcodes, 57
Screen
- See Touch screen
Screenshot disclaimer, 5
Selecting items, on screen, 54
Self-checks, 38, 140
Service, 141
Settings
- See Definitions
Setup
- analyzer, 87
- barcode standards, 110
- HIS, LIS, DMS connections, 117
- network, 113
- network resources, 114
- system, 108
Share lot function
- disabling, 116
- using, 115
Shutting down analyzer, 63
Software
- installed versions, 134
- registering, 132
- updating, 129
Sorting results, 80
Specifications, 179
Spillages, 145
Starting
- analyzer, 47
Storage conditions, 180
Supplies, 180
Support, 5
Supporting documents, 4
Switching off analyzer, 63
Symbols used in this publication, 9
System elements
- versions and IDs, 136
System settings, 108

T

Technical data, 179
Text, entering, 56
Touch screen
- calibrating, 142
- cleaning, 144
- overview, 43
- selecting items, 54
- selecting predefined items, 55
Trademarks, 5
Transport conditions, 180
Troubleshooting, 149
- backup, 168
Tube entry door, 41
Tube entry door error
- resolving, 173
Turning off analyzer, 63

U

Uninstalling assays, 104
Unlocking the analyzer, 61
Unlocking users, 126
Updating assays
- from remote service platform, 93
- from USB key, 90
Updating software, 129
USB key
- for assay installation, 90
- for assay update, 90
User IDs
- about, 123
User rights, 122
Users
Index

- changing information, 126
- defining, 123
- deleting, 128
- locking, 126
- unlocking, 126

V

Versions
- software, 134
- system elements, 136

W

Warranty, 5