1SDH000891R0002

L8613

EKIP Connect

User's Manual

Power and productivity
for a better world™

WARNING

HAZARDOUS VOLTAGE
CAN SHOCK, BURN
OR CAUSE DEATH.

Do not attempt to handle, install, use or service this product before reading instruction book

READ THIS DOCUMENT CAREFULLY BEFORE USING THIS SOFTWARE WITH THE CIRCUIT-BREAKERS AND RELATIVE RELEASES.

- These instructions must be filed along with any other instructions, drawings and descriptive documents. Keep this document in an accessible place for consultation when required.
- Consult the circuit-breaker manuals when installing the software. This software is designed to function in accordance with the compatibility specifications. Consult the relative section before use.
- Comply with the safety procedures required by your Company.
- Do not touch covers, open doors or work on the apparatus connected to the software unless the power supplied to the switchgear in which it is housed has been disconnected and until all the circuits have been de-energized.

DANGER! The following operations are mandatory before proceeding with any work on a circuit-breaker:

1. **Set the circuit-breaker in the open position and make sure that the springs of the operating mechanism are not loaded (if applicable).**
2. **Disconnect the circuit-breaker (power circuit and auxiliary circuits) from the electric power source and earth the terminals in a visible way, on both the supply side and load side.**
3. **Detach the circuit-breaker from the installation. Remove it from the switchgear if possible.**
4. **Put equipment in a safe condition as established by the standards and laws in force.**

WARNING! This document does not contain the detailed descriptions of each page available when each compatible release is connected, the safety regulations or the possible interactions with the maintenance operations. Please note that this document contains warnings and precautionary instructions, but does not envisage all the possible modes in which the software can be used and that may or may not be recommended by ABB, nor the possible risks that each of these modes implies, neither can ABB investigate these issues. Anyone who implements procedures or uses equipment that may or may not be recommended by ABB must make very sure that neither the safety of the personnel nor that of the installation is endangered by the chosen procedures or equipment. Please contact ABB if further information is required or if specific problems arise that have not been explained sufficiently.

- This document is designed for use by qualified personnel. It is not intended as a substitute for an adequate training course or adequate experience with the safety procedures for this software connected to the equipment.
- It is the responsibility of the Customer, the installer or the end user to make sure that warning signs are affixed and that all the access doors and operating handles are closed in safety conditions when the equipment connected to the software is left even only momentarily unattended.
- All information in this document is based on the latest product data available at the time of printing. ABB reserves the right to make changes at any time and without prior notice.

Table of contents

Introduction to Ekip Connect 5

1. ABB Ekip Connect....5

Presentation....5
Ekip Connect functions....5

2. First steps....6

Run Ekip Connect....6
Interface....6
Multifunction toolbars....7
Message area....7
Exit Ekip Connect....8

3. Connection to a release....9

Available scans....9
Connection to one release....9

Communication with a release 10

4. Layout....10

Introduction....10
Communication interface....10
Navigation tree....11
List of Devices page....12
Overview page of a release....12
Pages of a release....12
Interface elements....13

5. Release configuration and monitoring....13

Parameter entry....13
Execution of operation commands and winks....14
Execution of Data logger commands....14
Current/Time curve display....15

6. Generation of reports....16

Introduction....16
Display reports....16
How to export reports or send them via e-mail....16
Data Viewer....16

Test 17

7. Useful information about the tests....17

Introduction....17
Test session....17
Test reports....18
Display filter definition....19
Data management in the form of tables....20

8. Manual Test....21

Description....21
Manual test interface....21
Phasor diagram....22
Harmonics diagram....22
Start manual test....23

9. Test sequence....24

Description....24
Test sequence interface....24
Start test sequence....25

10. Trip test....26

Description....26
Start trip test....26

Power Controller 27

11. Useful information about the Power Controller....27

Description of the function....27
Power Controller in Ekip Connect....27
Access to Power Controller....27
Description of the interface....28

12. Power Controller configuration....29

Overview of the configuration process....29
Power Controller parameters....29
User parameters....29
Power Controller parameter entry....30
User parameter entry....30
Add a user....31
Match an image to a user....31
Remove a user....31

13. Consumption monitoring....31

Enable/disable Power Controller....31
Enable/disable a user....31
Monitoring with Power Controller....32

Data Import and export 33

14. Export....33

Introduction....33
Export release parameters....33
Export file for assistance....33
Leap file exportation....33

15. Import....34

Introduction....34
Import release parameters....34

Other functions 35

16. Ekip Connect maintenance....35

Automatic upgrade of Ekip Connect....35
Manual upgrade of Ekip Connect....35

17. Ekip Connect customizing....36

How to customize the behaviour of Ekip Connect....36
How to update your password....36

18. How to request assistance....36

How to obtain information about Ekip Connect....36
Consultation of manuals and documentation....36
Problem solving....37

Annex A: Connections 38

19. Architecture....38

Possible connections between release and Ekip Connect....38
Connection via Ekip T&P and Ekip Programming....38
Connection via serial line....39

Connection via USB port....39
Connection via Bluetooth....40
Co ction via Ethernet....40

20. Compatible devices....41

Compatible devices and hardware requirements 41

Annex B: Scanning procedure 43

21. Scanning via ABB key....43

How to start scanning via ABB key....43
Driver installation for ABB key and Bus scans....44

22. Serial bus scan....45

How to start scanning via Serial Bus....45
Serial scan parameters....46

23. Scanning via Bluetooth....47

Bluetooth activation for Windows Vista and Windows 7....47
How to start scanning via Bluetooth....47

24. Ethernet network scan....49

How to start scanning via Ethernet....49
Ethernet scan parameters....50

Introduction to Ekip Connect

1. ABB Ekip Connect

Presentation

Ekip Connect is ABB's software application for personal computers that interfaces with ABB low voltage circuit-breakers equipped with compatible protection releases. It allows the releases to be configured, monitored, controlled and tested.

Ekip Connect can connect to the releases in the point-to-point or network modes. Connection is made using the front test connector or to communication modules installed on the circuit-breaker.

NOTE: some release models can be configured exclusively with Ekip Connect.

Ekip Connect functions

Ekip Connect can communicate with one or more releases or test the operation of one release.

Communication with releases

Ekip Connect can communicate with one or more releases so as to:

- Monitor the state of the circuit-breakers connected and record information.
- Execute operations, resets, signalling, etc…
- Configure the protection releases with customized parameters.
- Download information from releases equipped with Data logger.
- Create communication reports.
- Reset configurations.
- Configure and monitor the Power Controller function.

NOTE: bus network architecture is required to communicate with several releases.

Single release test

Ekip Connect can test the operation of one release at a time so as to:

- Simulate fault conditions by performing manual or sequential tests.
- Perform trip tests.
- Create test reports.

NOTE: the Ekip T&P test kit is required to test one release.

2. First steps

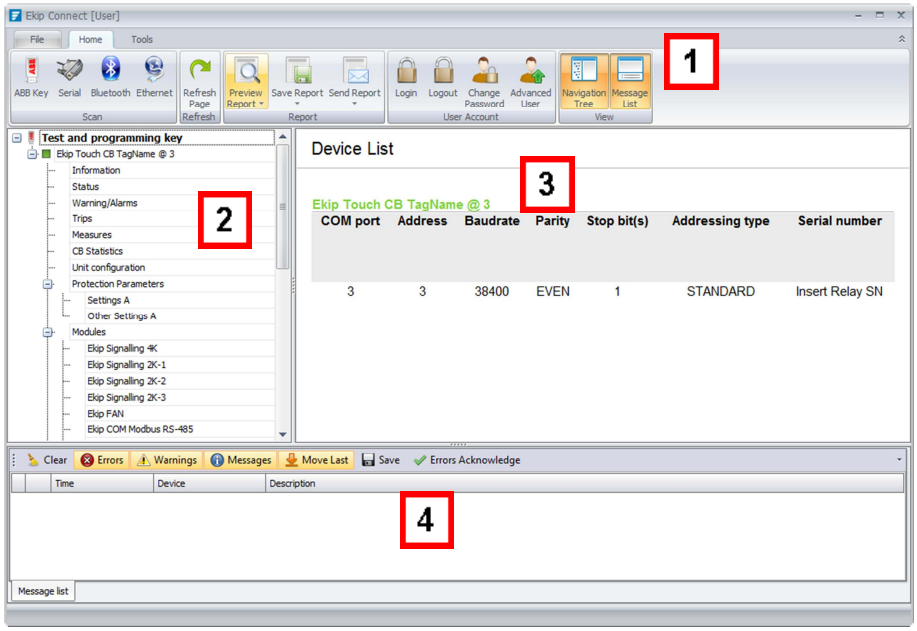
Run Ekip Connect

As soon as it starts up, Ekip Connect displays its interface. There may be a message about how to deal with the automatic upgrades.

→ *Details about the automatic upgrades can be consulted in "Automatic upgrade of Ekip Connect" on page 35.*

Interface

The Ekip Connect interface is illustrated below:



Area	Description
1	Three multifunction toolbars with all the software functions
2	Navigation tree showing the releases connected, consult "Navigation tree" on page 11.
3	Workspace that changes, depending on the function activated.
4	Message area, see "Message area" on page 7.

Multifunction toolbars

The software functions are described below per multifunction toolbar:

Tool-bar	Functions	See
Files	Import file	*page 34*
	Save/export files	*page 33*
	Upgrade software and release descriptors	*page 35*
	Access technical documents (including this manual)	-
	Customize Ekip Connect interface	*page 36*
	Request password (function reserved to ABB personnel).	-
	Exit Ekip Connect	*page 8*
Home	Connect and communicate with releases	*page* ***Errore. Il segnalibro non è definito.*** *page 10*
	Manage reports	*page 16*
	Access reserved functions	-
	Change data display page layout	-
Tools	Display data	*page 16*
	Perform release test	*page 17*
	Check power consumption.	*page 27*

Message area

*Click on **Message list** in **Home** to display the message area.*

The message area displays the messages sent to the releases.
The following operations can be performed:

Push-button	Description
Clear	Deletes the list of messages.
Error	Shows/conceals the error messages.
Warning	Shows/conceals the warning messages.
Messages	Shows/conceals the information messages.
Move last	Shifts the focus so as to display the last message.
Save	Saves the messages in the CSV format.
Error acknowledge	Acknowledges the error messages.

Exit Ekip Connect

*Click on **Exit** in **File** to exit the application.*

3. Connection to a release

Available scans

Connection to a release is achieved by means of four possible scan types, depending on the connection architecture. The following scanning commands are available in the **Home** toolbar:

Command	Description
ABB Key	Performs scanning via USB Flash Drive by means of the Ekip T&P or Ekip Programming converters.
Serial	Performs scanning by searching for the connected releases via serial or BT030-USB architecture.
Bluetooth	Activates the Bluetooth antenna and searches for the releases by means of Bluetooth architecture within a 10-meter range.
Ethernet	Scans by means of the network cable: each release is recognized by its IP address.

NOTE: a point-to-point connection is recommended when the software is used for the first time.

Connection to one release

→ *For further details about the scanning procedures and how to connect to a release, consult "Annex B: **Scanning procedure**" on page 43.*
→ *For further details about the types of architecture and compatibility of devices, consult "Annex **A: Connections**" on page 38.*

Communication with a release

4. Layout

Introduction

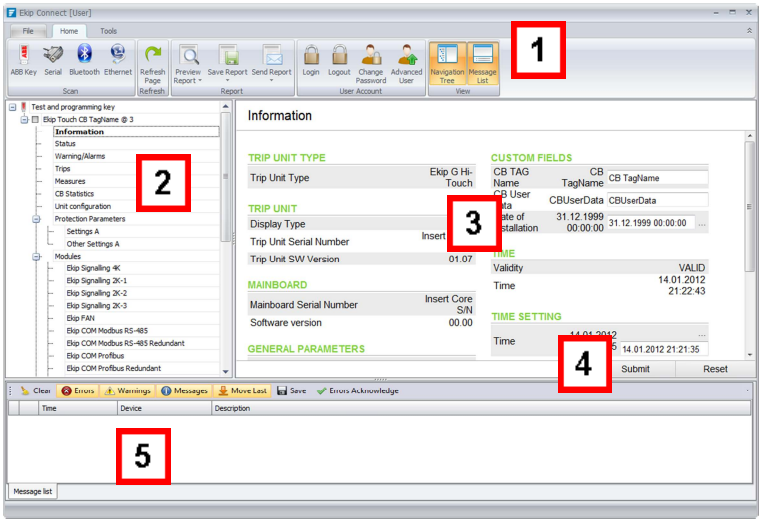
After having made a connection with one or more releases, you can display the values, states and circuit-breaker alarms, and send parameters and commands by means of the **Home** page**.**
The combination of commands available in the commands area and those of the menu allow the communication functions to be managed, i.e.:

- monitoring.
- parameter setting.
- execution of commands.
- data logger.
- reports

DANGER! Communication can also be activated with the circuit-breaker in use, thus in the presence of current and voltage.

Communication interface

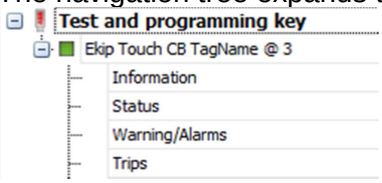
After connection to a release, the information and commands of the releases found appear in the **Home** page.
This page is illustrated below:



Area	Description
1	**Home** multifunction toolbar for: - updating the page managing reports logging in/logging out changing the user password - enabling the advanced user profile - displaying/concealing the navigation tree - displaying/concealing the diagnostic panel
2	Navigation tree: contains the list of releases found during the scan, and the pages available for each.
3	Data page open
4	Push-buttons for commands
5	Area with diagnostic messages. *See “Message area” on page 7.*

Navigation tree

The navigation tree expands to three levels.



These levels are described below:

Level	Description
1	Type of scan performed: Opens the **List of devices** page
2	Name of the release, associated with an icon that describes the connection status. Opens a page containing brief information about the communication parameters. The connection statuses are listed below.

Symbol	Description
	Flashing. Release connected by its system bus, even in the local mode.
?	Release unknown.
	Release not connected.
	Flashing. Release in alarm status.
	Flashing. Release after a wink command.

Level	Description
3	Pages available for the selected release. One or more pages containing information and specific commands are associated with each release. Examples are: • general information about the circuit-breaker and protection release • management of accessory functions (Data logger of modules) • presence and type of alarms • measurements acquired in real time: current, voltage, energy, power, etc. • protection parameters and other configurations of the circuit-breaker • historical data about events and measurements, and statistics *NOTE: the data and commands of each release and arranged differently in the pages.*

List of Devices page

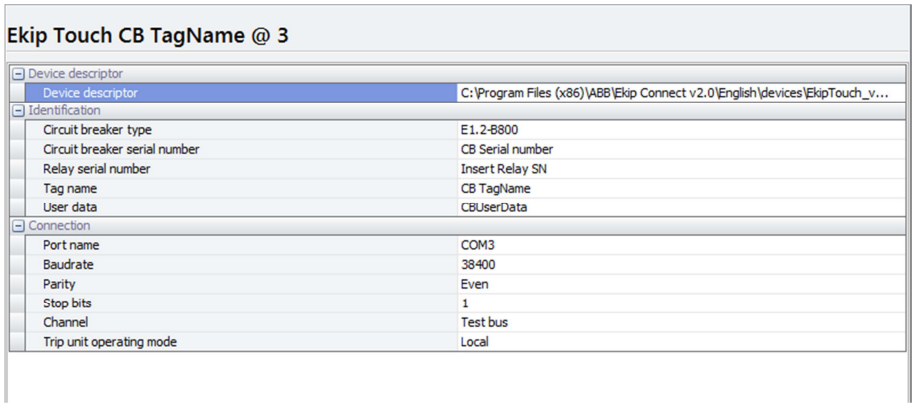
*Select the type of scan in **Home**, navigation tree, to access the **List of Devices** page.*

Displays the list of releases found during the scan, and the relative communication parameters.

Overview page of a release

Select the name of the release to open its overview page.

An overview of the release will appear, including information about its data descriptor and the communication parameters.



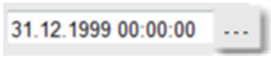
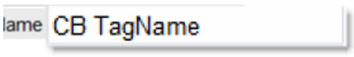
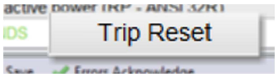
Pages of a release

*Select the page name in **Home**, navigation tree, to access a page.*

The pages contain information about the circuit-breaker and provide options for reading/writing the parameters, reading the measurements and executing commands.
An example of a harmonics page is illustrated below.

Interface elements

The following interface elements are available in the release pages:

Element	Function
	Opens the window where the value can be changed.
	Indicates that the value has not been received.
	List box for entering values.
	Text box for entering values.
	Command button (in the commands area or in the page).

5. Release configuration and monitoring

Parameter entry

The parameters displayed in the pages can be in the reading, or reading/writing modes. Parameter editing requires entry of the password, if this has not already been entered.

***IMPORTANT: The advanced user profile must be enabled before some of the parameters can be displayed and edited. Click on** Advanced User **from** Home**.**

NOTE: *if the release is connected by means of serial architecture or the Ethernet and the local mode has been selected, some of the parameters will only be available in the local mode.*

The procedure for editing the parameters is described below.

Step	Action
1	To edit a parameter: • open the list box if present, and select the required value, or • click on the **…** button and type in the value. *NOTE: click on **Reset** in the commands area to restore the previous values of the parameters.*
2	Click on **Submit** in the commands area and enter the password if requested: the changed parameter values will be transmitted to the circuit-breaker.

Execution of operation commands and winks

*Select the **Status** page in **Home**, navigation tree, to operate the circuit-breaker and send wink commands.*

WARNING! Execution of operation commands will change the state of the circuit-breaker.

These commands are described below:

Command	Description
CB opening	Commands circuit-breaker opening in the remote mode. Only for circuit-breakers equipped with motor operator.
CB closing	Commands circuit-breaker closing in the remote mode. Only for circuit-breakers equipped with motor operator.
Reset CB	In the “tripped” condition, opens the circuit-breaker. Only for moulded-case circuit-breakers equipped with motor operator.
Wink	Activates/de-activates flashing of a LED or the display of the release, to make it easier to identify.

Execution of Data logger commands

*To manage data registration, select the **Datalogger** page in **Home**, navigation tree.*

Data registration is an optional function available for certain protection releases (e.g.: PR123/P). Ekip Connect manages data registration in the remote mode, along with the relative commands.
The registration data are stored in the release and can be downloaded from Ekip Connect and saved as files.

→Consult the circuit-breaker manual at http://www.abb.com/abblibrary/DownloadCenter/ for more details about the data.

→ To display the downloaded files, consult “Data Viewer” on page 16.

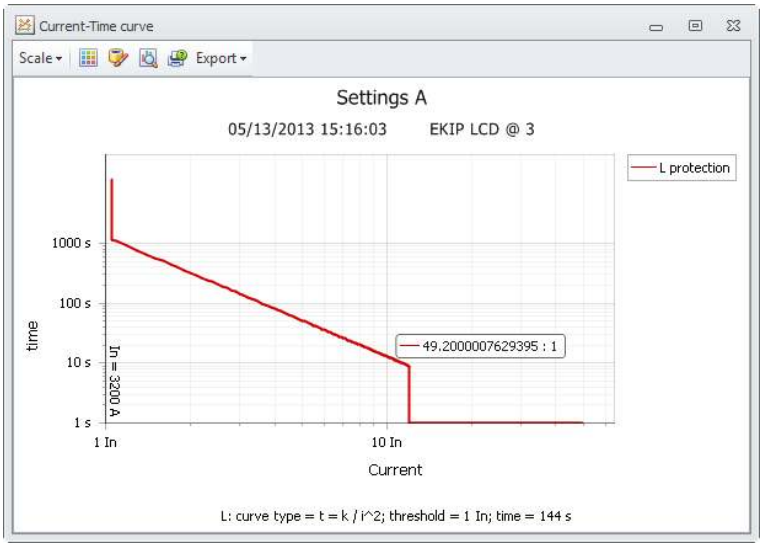
The commands are described below:

Command	Description
Start DLx	Starts the data registration process.
Stop DLx	Interrupts the registration.
Download DLx	Saves the recorded data in a file.

Current/Time curve display

*To display a curve, select the **Protection Parameters**, **Settings A** in **Home**, navigation tree, and click on **Current/Time curve.***

This function gives a graphic representation of protection parameters L S I and G. If the parameters are changed, the graph is also updated. The graph is illustrated below:



According to the reference standards of the release (IEC or UL), current threshold I1 is drawn on a level with the 117% or 105% marks.
The toolbar contains additional commands for:

- changing the current scale from absolute (unit of measurement A) to relative (unit of measurement %In), and vice versa
- displaying the preview and changing the appearance of the graph
- printing the graph
- exporting the graph to one of the indicated formats

6. Generation of reports

Introduction

Reports containing the same information displayed in the release pages can be displayed, saved and transmitted.
The report can be:

- about the current page
- about all the pages
- a document protected by a password. The document contains reserved data and the password is only known to ABB personnel.

Display reports

*To display a report, go to **Home**, click on **Preview Report** and select the type of report required.*

The toolbar contains additional commands, mainly to:

- change display
- find a data item
- print
- set the page
- move the page
- enlarge or reduce
- scroll the entire document
- export or send the document in different formats

NOTE: the reports can be saved or sent in the following formats: PDF, HTML (saving only), MHT, RTF, XLS, XLSX, CSV, Texts and Images.

How to export reports or send them via e-mail

*To export or send a report, go to **Home**, click on **Save Report/Send Report** and select the type of report to be saved/sent.*

NOTE: the reports are saved and sent in the PDF format. If the report must be exported or sent in another format, consult “Display reports” on page 16”.

Data Viewer

*To access Data Viewer, go to **Tools** and click on **Data Viewer.***

Data Viewer allows you to display the registrations made with the Data logger command. Select **Help, User Guide** in the **ABB SD-DataViewer** window to access the user guide which contains information about how to use the function.

Test

7. Useful information about the tests

Introduction

Ekip Connect allows you to check how the protection release behaves in conditions that would be difficult to reproduce, and to validate, in reality:

- the type of installation chosen (type of circuit-breaker, type of release, etc.)
- the parameters with which the release has been configured

NOTE: the test function is only available with point-to-point architecture via Ekip T&P.

Test session

*To define the test session, go to **Tools** and click on **Test Session.***

Test session allows additional information of use when managing the test reports, to be added to the tests.

NOTE: definition and activation of a session are not obligatory and do not change test operation.

The data that characterize the session are:

- description
- operator
- place
- client

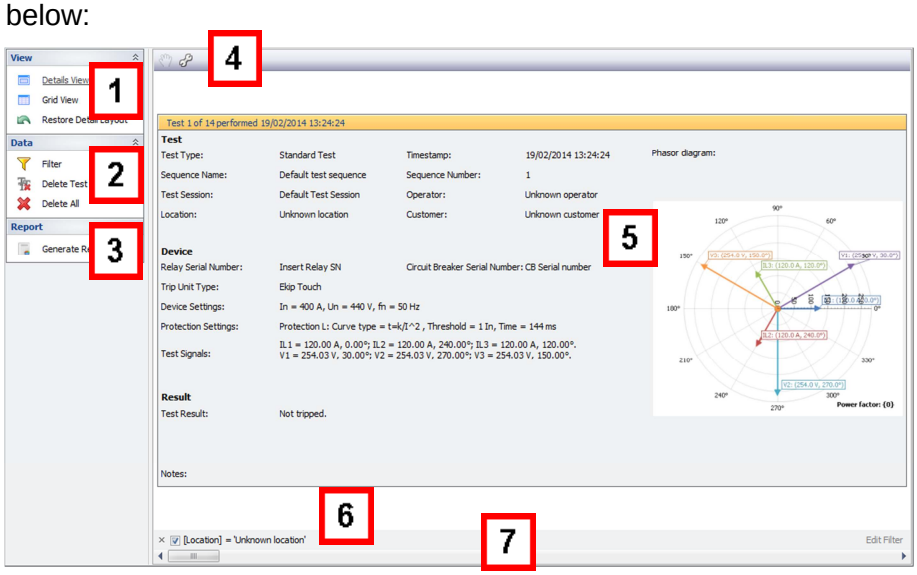
You can**:**

- define and run a new session
- run a previously defined session
- run a default test session

Test reports

*Go to **Tools** and click on **Test Report** to display and generate test reports.*

Information about the tests performed is given in a dedicated section. The page is illustrated below:



NOTE: Ekip Connect files the information about all the tests performed. This information is always available and can be displayed even when Ekip Connect is shut down and restarted.

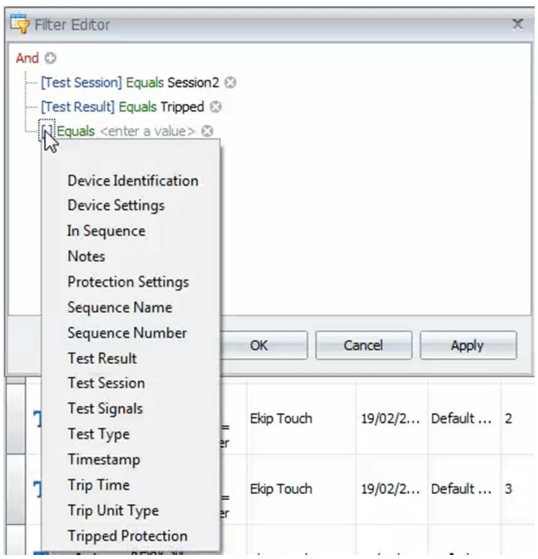
Area	Function
1	• **Details view**: displays the details of each test performed in area **[5]**. • **Grid view**: displays a table in area **[5]** containing some of the data of the tests performed. • **Restore Detail Layout**: restores the layout and the details displayed in the **Details View**.
2	• **Filter**: allows the test display filters to be defined, see “Display filter definition” on page 19. • **Delete Test Session**: deletes the tests of a specific session. • **Delete All**: deletes all the tests, regardless of the filters.
3	• **Generate Report**: generates report of selected test or of all tests.
4	• : enables the hand cursor to move and display all the test page. • : allows the details of the indicated tests and the layout in which they are displayed in the **Details View**, to be customized.
5	Displays the data of the **Details View** or **Grid View.** A display filter can be set for a specific field, see “Display filter definition” on page 19 and enter notes in the **Notes** field.
6	Displays the filters that have been defined: Defined filters can be disabled/enabled or modified.
7	Test scrolling commands. NOTE: *the arrow keys on the keyboard can also be used.*

Display filter definition

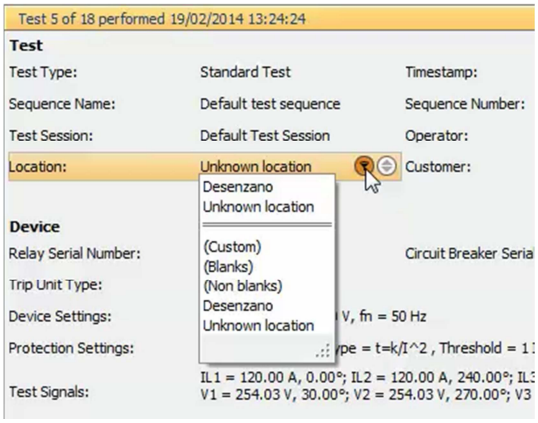
The display filters of the tests performed can be defined in the **Test Report** section in two ways:

- **Filter** command, which can also be used to define complex filters
- filter command of each individual data item, to define the filter of the data item in question.

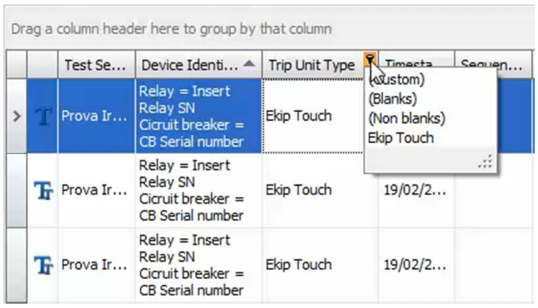
An example of a filter defined via the **Filter Editor** window is illustrated below



An example of a filter for the **Location** data item in **Details View** is given below



An example of a filter for the **Trip Unit Type** data item in **Grid View** is given below

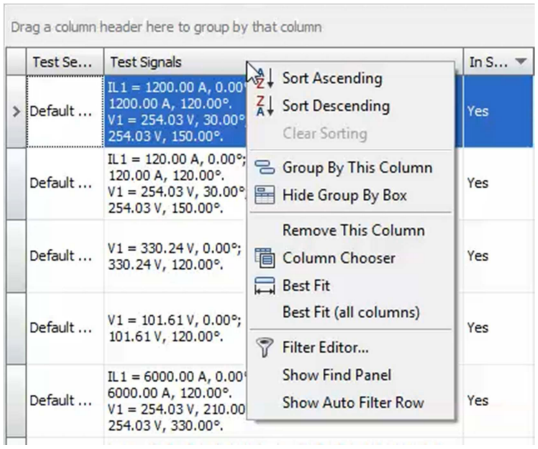


Data management in the form of tables

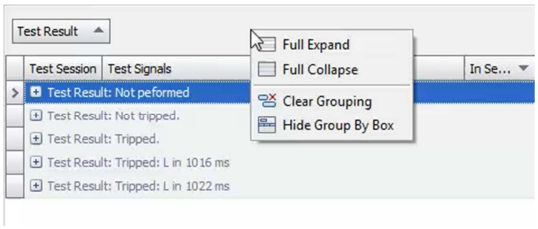
The tables provide the main functions of an Excel table, for example:

- delete or add a column
- set columns in order
- group the tests for a specific session.

The functions are available in the menus accessed by right-clicking on a column header or on the area for the test grouping criteria.
The column header menu is illustrated below:



The menu of the area with the grouping criteria is illustrated below:



8. Manual Test

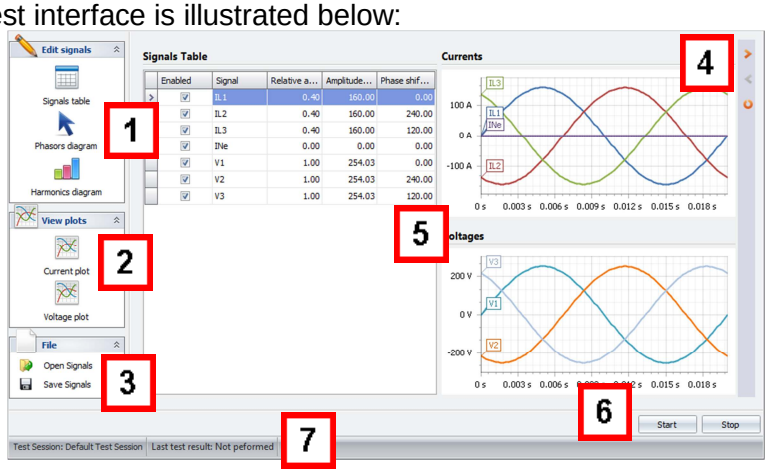
Description

The manual test mode allows you to simulate customized current and/or voltage values.

Manual test interface

*To access the manual test environment, go to **Tools** and click on **Test.***

The manual test interface is illustrated below:

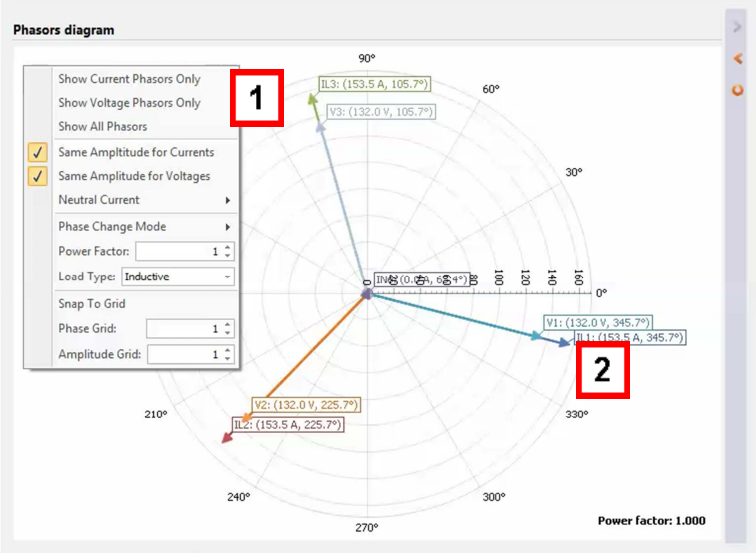


Area	Function
1	• **Signal table**: displays and modifies the numerical value of the amplitude and phase difference of the fundamental component of the test signals. Amplitude can be expressed both in relative (rated current/voltage) and absolute terms (Amperes/Volts). • **Phasors diagram**: displays and modifies the phasors of the signals that are simulated during the test. • **Harmonics diagram**: displays and modifies the amplitude of the 3rd, 5 th, 7 th and 9 th harmonic component of the AC test signals.
2	• **Current plot**: displays the current graph in area **[4]**. • **Voltage plot**: displays the voltage graph in area **[4]**. NOTE: *the voltage graph is only displayed if voltage reading is envisaged in the protection release.*
3	• **Open signals**: opens the previously saved signal configuration • **Save signals**: saves the signal configuration
4	Displays the signal values or graphs, depending on what has been selected in **Edit signals** and **View plots.**
5	• : conceals the current and voltage graphs • : displays the current and voltage graphs • : restores the signal values
6	• **Start**: starts the test • **Stop**: stops the test
7	Displays the data of the current test session and the results of the last test performed.

Phasor diagram

*To access the phasor diagram, go to **Tools** and click on **Test, Phasor diagram.***

The phasor diagram is illustrated below:



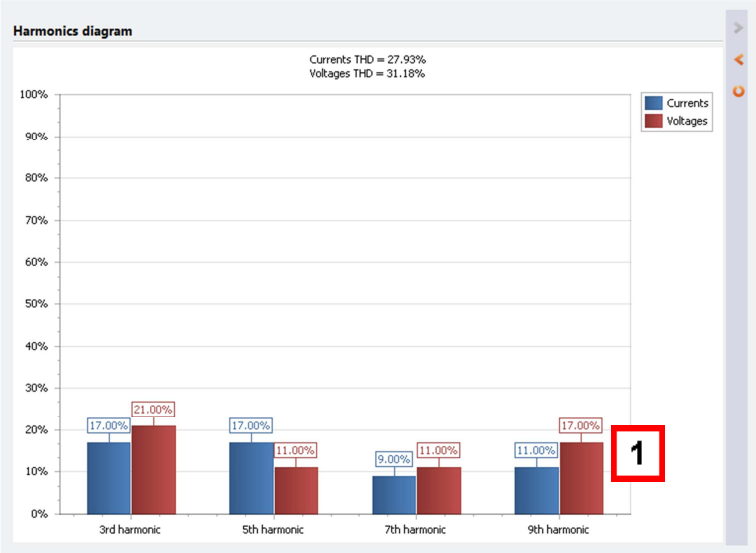
Right-click in any point of the diagram to access a menu where the diagram can be set **[1]**, e.g. to indicate the type of load (inductive or capacitive) or, if the voltage module is present, to enter the power factor (cosφ).

Just drag the end of a phasor **[2]** to modify the diagram.

Harmonics diagram

*To access the harmonics diagram, go to **Tools** and click on **Test, Harmonics diagram.***

The harmonics diagram is illustrated below:



Just drag a point of the harmonic **[1]** to modify the diagram.

Start manual test

DANGER! Only perform the test with the circuit-breaker open.

The manual test starting procedure is described below.

Step	Action
1	Go to **Tools** and click on **Test:** a window requesting test session definition may open when the first test is run: • click on **Yes** to define a test session or activate an already defined test. • click on **No** to continue without defining a test session. ***IMPORTANT: once a session has been activated, the following tests will all be associated with that session.*** *→ Details about the test sessions can be consulted in "Test session" on page 17.*
2	Change the signals in the preferred mode (e.g.: phasors, harmonics).
3	Click on **Start**: the signals are sent to the protection release. A test status bar appears in the lower part of the Ekip Connect interface and the relative messages are displayed in the messages area. The corresponding measurements made by the release can be displayed during the test, in the communication part. **WARNING! None of the parameters can be edited during the test.** NOTE*: the release may generate a trip, depending on how it has been configured.* *→ Details about the measurements displayed can be consulted in "Pages of " on page 12.*
4	You can click on **Stop** at any moment to interrupt the test.

9. Test sequence

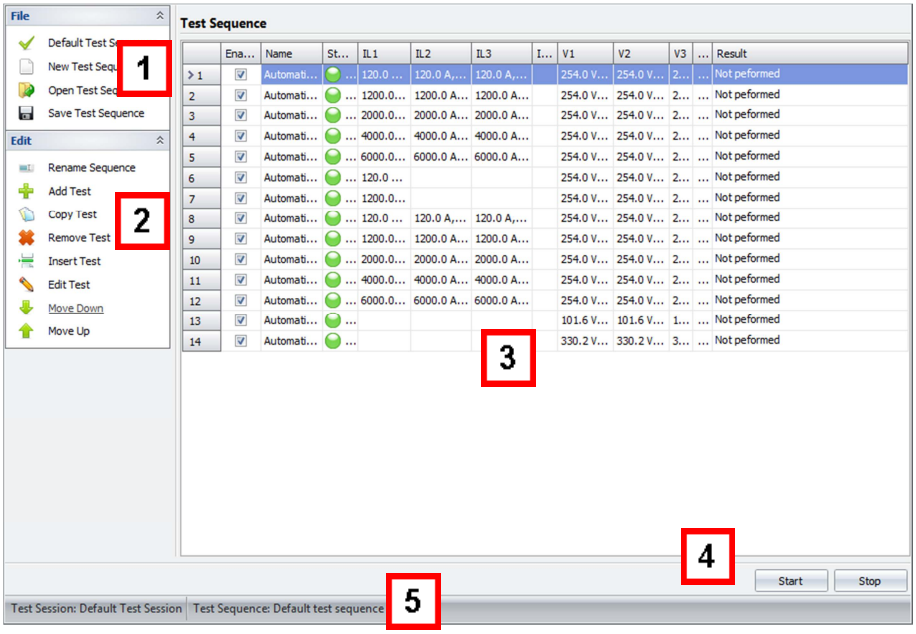
Description

The sequential test mode allows you to perform a sequence of tests. ABB provides a sequence of predefined tests that covers the widest possible range of abnormal current and voltage values. Customized test sequences can be created.

Test sequence interface

*To access the test sequence environment, go to **Tools** and click on **Test Sequence***

The test sequence interface is illustrated below:



Area	Description
1	Commands for selecting the sequence. They allow you to: • open the default sequence provided by ABB • create a sequence • open a previously saved sequence • save the current sequence
2	Sequence management commands. They allow you to: • rename the sequence • add, copy, delete, insert or edit a test • change the order of the sequence by moving a test up or down
3	List of current sequence tests. The status and result of each test are indicated during the test.
4	• **Start**: starts the test • **Stop**: stops the test
5	Session and sequence data of current tests.

Start test sequence

DANGER! Only perform the test with the circuit-breaker open.

The test sequence starting procedure is described below.

Step	Action
1	Go to **Tools** and click on **Test sequence:** a window requesting test session definition may open when the first test is run: • click on **Yes** to define a test session or activate an already defined test. • click on **No** to continue without defining a test session. ***IMPORTANT: once a session has been activated, the following tests will all be associated with that session.*** *→ Details about the test sessions can be consulted in "Test session" on page 17.*
2	Select the required test sequence and change the parameters of the individual tests if required. *→ Details about individual test configuration can be consulted in "Manual Test" on page 21.*
3	Click on **Start**: the signals are sent to the protection release. The release may generate a trip, depending on how it has been configured. The status (**Status** column) and the result (**Result** column) are indicated for each test. The corresponding measurements made by the release can be displayed during the test, in the communication part. **WARNING! None of the parameters can be edited during the test.** NOTE*: the release may generate a trip, depending on how it has been configured.* *→ Details about the measurements displayed can be consulted in "Pages of " on page 12.*
4	You can click on **Stop** at any moment to interrupt the test.

10. Trip test

Description

The trip test allows you to check the operation of the opening solenoid. The purpose of the test is to check that the circuit-breaker switches from closed to open after the opening solenoid has received a tripping command.

Start trip test

*To start the trip test, go to **Tools** and click on **Trip test.***

DANGER! Make sure that the circuit-breaker is closed but not under service conditions before performing the test.

The trip test starting procedure is described below:

Step	Action
1	A window requesting test session definition may open when the first test is run: • click on **Yes** to define a test session or activate an already defined test. • click on **No** to continue without defining a test session. ***IMPORTANT: once a session has been activated, the following tests will all be associated with that session.*** *→ Details about the test sessions can be consulted in "Test session" on page 17.*
2	After having read the text in the **Warning** window and if all the conditions have been complied with, click on **Next**: this will transmit a trip command to the opening solenoid.
3	A window requesting test result notification will open at the end of the test: • if tripping has occurred (the opening solenoid has tripped and the circuit-breaker has opened), click on **Yes**. • otherwise, click on **No** The notified test result will be added to the report.

Power Controller

11. Useful information about the Power Controller

Description of the function

Power Controller is an optional function integrated into the release that controls the loads and generators in real time (up to fifteen users) and correlates the average power consumption during a time frame preset by the user, to the power established in the supply contract. Depending on the results obtained, Power Controller disconnects or reconnects the users according to criteria such as:

- their importance within the installation (priority)
- the time required for them to function correctly

Power Controller modulates the installation's electric power demand and limits consumption peaks. Its use focuses on two targets:

- reduce consumption costs
- prevent faulty operation

→ *For further details about the function, consult the white paper "Load management with Ekip Power Controller for SACE Emax 2" at http://www.abb.com/abblibrary/DownloadCenter/ .*

Power Controller in Ekip Connect

Via Ekip Connect you can:

- quickly configure both the function and the users
- monitor the status of the users and values measured

NOTE: management of the function via Ekip Connect is independent from the type of connection between computer and release

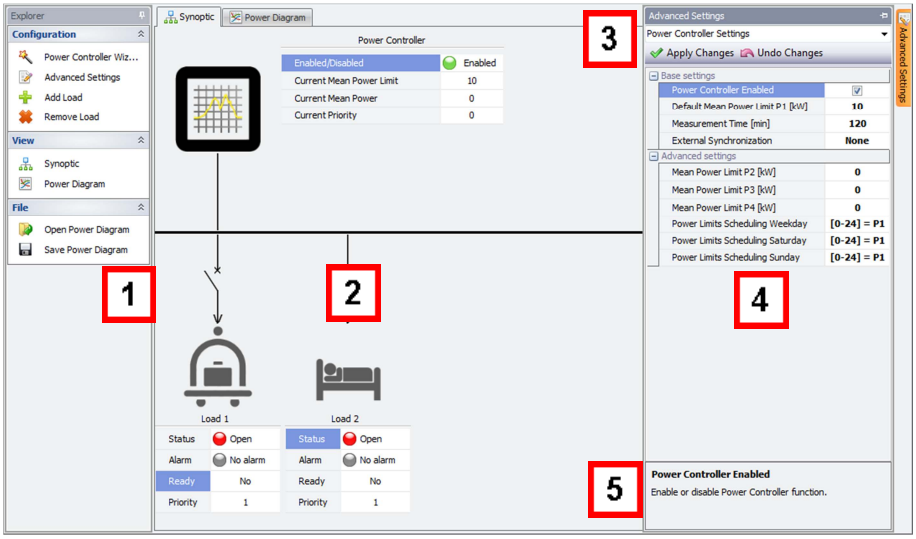
Access to Power Controller

To access Power Controller:

Step	Action
1	Select the release you want to configure or monitor in the navigation tree
2	Go to **Tools** and click on **Power Controller**. *NOTE: If the message "**No power controller available for this device"** appears, it means that the function has not been enabled in the device.*

Description of the interface

Once communication with the release has been activated, the **Power Controller** interface page appears as illustrated below:



Area	Description
1	• **Configuration**: commands for the configuration and graphic layout of the installation • **Views**: commands for selecting the view to display in area **[2]**. • **File**: commands for opening or saving the power trend diagram (**Power Diagram**)
2	• **Synoptic** template, graphic representation of the installation managed by Power Controller. Right-click on the Power Controller symbol or on that of a user to access a context menu about its management. • **Power Diagram** template: graph of the power trend over time. Right-click on the toolbar to access a context menu where it can be customized.
3	List box for selecting which parameters to display.
4	Parameters for entering the settings of the Power Controller and individual users in the manual mode. Displays the parameters on the basis of what has been selected in **[3]**
5	Area containing a description of each parameter.

12. Power Controller configuration

Overview of the configuration process

The process for configuring Power Controller is described below:

Step	Description
1	Enter Power Controller's general parameters in the manual mode or use the Power Controller Wizard user-friendly procedure.
2	Enter the parameters of each individual user, the inputs and outputs in the manual mode or using three user-friendly procedures: • General Parameters Wizard • Status Signal Wizard • Command Signal Wizard
3	Enable Power Controller and the users whose consumption must be checked.

NOTE: it is advisable to configure Power Controller and the users with the user-friendly procedure when first used. After this, changes can be made to the individual parameters in the manual mode via ***Advanced Settings.***

Power Controller parameters

The Power Controller parameters are:

- Power Controller Enabled (*)
- Default Mean Power Limit P1 (kW) (*)
- Measurement Time (*)
- External Synchronization (*)
- Mean Power Limit P2 (kW)
- Mean Power Limit P3 (kW)
- Mean Power Limit P4 (kW)
- Power Limit Scheduling Weekday
- Limit Scheduling Saturday
- Limit Scheduling Sunday

NOTE (*): parameters that can also be entered via the user-friendly procedure.

User parameters

The user parameters are:

- Load Enabled
- Shed Priority
- User Type
- Minimum tOff [min]
- Minimum tOn [min]
- Maximum tOff [min]
- Maximum tOn [min]
- Time Window [h]
- Connections
  - First Status Signal
  - Second Status Signal
  - First Command Signal
  - Second Command Signal

Power Controller parameter entry

Power Controller's parameters can be entered either using the user-friendly procedure or in the manual mode, parameter by parameter:

NOTE: the installation users are created in the user-friendly procedure. They can also be added afterwards.

Configuration with the user-friendly procedure
To enter the Power Controller parameters in the user-friendly mode:

- Go to **Configuration** and click on **Power controller wizard**, or
- Right-click on the Power Controller symbol in the **Synoptic** template and select **Power controller wizard**

Manual configuration
To enter the Power Controller parameters in the manual mode:

1. Go to **Advanced Settings** and select **Power Controller Settings from the list box.**
2. Edit the parameters.
3. Click on **Apply Changes** to save the changes or on **Undo Changes** to annul them.

User parameter entry

The parameters of a user can be entered either using the user-friendly procedure or in the manual mode, parameter by parameter.

*NOTE: the number of input and output signals that must be managed per user are defined in the user-friendly procedure. Others cannot be added afterwards. The **Status signal wizard** or **Command signal wizard*** must be rerun.

Configuration with the user-friendly procedure
Configuration of a user is complete when the three user-friendly procedures have terminated:

- General Parameters Wizard: general parameters
- Status Signal Wizard: input configuration
- Command Signal Wizard: output configuration

To run the user-friendly procedure:

- Right-click on the user symbol in the **Synoptic** template and select **General parameters wizard**

IMPORTANT: at the end of the user-friendly procedure, the system will ask whether you want to continue with the next user-friendly procedure or interrupt. If you choose to interrupt, you can access each user-friendly procedure from the Synoptic ***template by right-clicking on the symbol corresponding to the load to be configured and selecting the user-friendly procedure in question.***

Manual configuration
To enter the parameters in the manual mode:

1. Go to **Advanced Settings** and select **Load x Settings** from the list box.
2. Edit the parameters.
3. Click on **Apply Changes** to save the changes or on **Undo Changes** to annul them.

Add a user

To add a user:

- Go to **Configuration** and click on **Add Load**, or
- Right-click on the Power Controller symbol in the **Synoptic** template and select **Add Load**

Result: the new user is added to the end of the others.

Match an image to a user

To match an image to a user:

1. Right-click on the user symbol in the **Select image**
2. Select the required image and click on **OK**

Result: the selected image becomes the symbol of the user.

NOTE: the symbol is grey if the user is disabled, black if it is enabled.

Remove a user

To remove a user:

- Go to **Configuration** and click on **Remove Load**, or
- Right-click on the Power Controller symbol in the **Synoptic** template and select **Remove Load**

Result: the last user to have been added is removed.

13. Consumption monitoring

Enable/disable Power Controller

In order to see the results of the function, Power Controller must be enabled:

- Choose **Yes** in the **Power Controller Enable – Step 5 of 5** window of the **Power Controller Wizard** user-friendly procedure, or
- Go to **Advanced Settings**, select **Power Controller Settings** from the list box and then select **Load Enabled** in the check box
- Right-click on the Power Controller symbol and select **Enable Power Controller**

From this moment onwards, the function in the release modulates the users' electric power demands and limits consumption peaks. The controlled users will be disconnected according to the priority settings and available time slots.

Enable/disable a user

To allow Power Controller to manage a user, that user must be enabled:

- Go to **Advanced Settings**, select **Load x Settings** from the list box and then select **Power Controller Enabled** in the check box
- Right-click on the user symbol and select **Enable Load**.

Monitoring with Power Controller

Measurements and statuses can be monitored via Ekip Connect, once the function and the users have been configured.

Statuses and values of the function

The following data appear in the **Synoptic** template, alongside the Power Controller symbol:

Data item	Value
Enabled/Disabled	• (green): function in progress • (grey): function not activated
Current Mean Power Limit	Maximum power consumption limit
Current Mean Power	Average power consumed, with reference to the time slot in question.
Current Priority	Priority level of the users managed by the system. Indicates the priority level of the next users, which will be disconnected if necessary.

User statuses

The following data appear in the **Synoptic** template, under each user:

Data item	Value
Status	• (green): user open • (red): user closed • (grey): status not defined
Alarm	• (red): alarm activated. The reasons are: o the user has changed status regardless of the Power Controller command o the user has not performed a Power Controller command • (grey): alarm not activated
Ready	• **yes**: user activated and controllable by Power Controller • **no**: the user cannot be managed by Power Controller because: o user managed in the manual mode o user status not defined o alarm activated o **Minimum time ON** or **Minimum time OFF** activated o the time slot is within the range described in **Time window** o user disabled
Priority	Priority level with which the user must be managed. This is represented by a number from 1 to 15 where: • 1=first users to be disconnected and last to be reconnected (least important users) • 15=last users to be disconnected and first to be reconnected (most important users).

Data Import and export

14. Export

Introduction

*To export data, go to **File** and select **Save.***

Ekip Connect allows you to export information about the releases by means of XML files. You can export:

- the current parameters of one of the releases connected. This operation is useful for configuring both similar installations and similar devices
- data for technical assistance
- the leap file. In the case of communication activated with releases PR122 and PR123, it creates a file with information about maintenance via ABB LEAP (Life Expectancy Analysis Program) software.

Export release parameters

IMPORTANT: make sure that the parameters have been saved before exporting them. The parameters of a release can only be exported with communication activated.

To export the release parameters:

Step	Action
1	Go to **Device** and select the release
2	Go to **Page** and select the group of parameters to be exported (if applicable)
3	Click on **Settings**, indicate the name of the required file and click on **Save**.

→ *Details about the configuration parameters of the releases can be consulted in "Parameter entry" on page 13.*

Export file for assistance

To export data to send to the assistance service:

Step	Action
1	Go to **Device** and select the release
2	Click on **Service**, indicate the name of the required file and click on **Save**.

Leap file exportation

To export the leap file:

Step	Action
1	Go to **Device** and select the release
2	Click on **Button**, indicate the name of the required file and click on **Save**.

15. Import

Introduction

*To import parameters, go to **File** and select **Import.***

Ekip Connect allows you to import information about the releases by means of XML files. You can import parameters previously exported to one of the currently connected releases.

NOTE: some imports require the password. Password entry is only requested if the password was not entered after start-up.

Import release parameters

IMPORTANT: the parameters of a release can only be imported with communication activated.

To import previously exported release parameters:

Step	Action
1	Go to **Device** and select the release
2	Click on **Settings**, enter the password if requested, select the file and click on **Next**: Ekip Connect acquires the parameters saved in the file and sends them to the selected release.

NOTE: if the imported file contains parameters that are not compatible with the selected node, importing will be annulled and an error message will appear.

Other functions

16. Ekip Connect maintenance

Automatic upgrade of Ekip Connect

If enabled, automatic upgrade takes place automatically on each start-up.

Ekip Connect connects to the network and searches for upgrades. If these are found, it asks what must be upgraded. Select:

- **Ekip**: to download a new version of Ekip Connect.
- **Descriptors**: to download new descriptor file versions.
- **Cancel**: to interrupt the search and upgrade process. Ekip Connect continues functioning in the installed version.

*NOTE: if the **Ekip** and **Descriptors** download options are present at the same time, selection of one option excludes the other. To upgrade the option that has not been selected, select the manual upgrading mode (in **File, Help**, **Check for Ekip Connect Update/Check for Device Descriptors Update**), or shut-down and rerun Ekip Connect and proceed with a fresh search.*

IMPORTANT: if Ekip Connect is started with the automatic search function enabled, the manual search functions will be disabled during the search. These functions will be enabled again once the automatic search has terminated.

Manual upgrade of Ekip Connect

*To upgrade Ekip Connect in the manual mode, go to **File** and select **Help**, **Check for Ekip Connect Update** or **Check for Device Descriptors Update.***

Ekip Connect connects to the network and searches for upgrades.

IMPORTANT: software installation in the manual mode is only allowed if Ekip Connect is not in use and if the version is the same or more recent than the one installed. Manual installation of an older version is indicated in a warning window, and inhibited.

IMPORTANT: manual upgrading is disabled during an automatic upgrade.

NOTE: versions that are the same or more recent than the ones installed may be found when the software and descriptors are upgraded in the manual mode: downloading is allowed in both cases.

17. Ekip Connect customizing

How to customize the behaviour of Ekip Connect

*Go to **File** and click on **Options** to change the options.*

The following items can be customized:

- automatic control of the upgrades: activated by default upon installation, activates/deactivates automatic management of the software and descriptor file upgrades
- the interface language: changes the language of the interface texts and release data
- the interface layout: changes the background colour of the windows
- the release test: enables/disables notification of when a test session begins.
- password management: enables/disables password storage

How to update your password

*Go to **Home** and click on **Change Password** to change your password.*

You need the password to perform operations that could change the functions of the releases.

NOTE: the password is "0001" by default.

18. How to request assistance

How to obtain information about Ekip Connect

*Go to **File** and click on **Device descriptors** to display the versions of the descriptors installed and update them.*

The data and parameters of each release are organized in descriptor files and displayed by Ekip Connect.
If the firmware version installed in the release is changed, it may be necessary to upgrade the descriptor files of that release.

IMPORTANT: always make a copy of the descriptor files currently installed.

Click on **Update** to download the new descriptors. Ekip Connect connects to the network and searches for the new files.

Consultation of manuals and documentation

*Go to **File** and click on **Help** to display the manuals.*

The circuit-breaker manuals can be displayed as well as this manual.

Problem solving

The solutions to potential problems that may arise when Ekip Connect is used are listed below.

Fault	Cause	Solution
“Device not found” is displayed after a Serial scan.	• Release not connected. • Release off. • Driver not installed.	• Connect the release and repeat the scan. • If connected, make sure that the release is on, then repeat the scan. • If the release is connected and on, consult “Driver installation for ABB key and Bus scans” on page 44.
“Device not connected” is displayed after a Bluetooth scan.	ABB Bluetooth adapter (BT030-USB or PR120/D-BT) not activated, e.g. because it is not connected to the release, or is off (as in the case of a discharged battery).	Connect the adapter to the release and/or check to make sure that it is on, then repeat the scan.
“Device not found” is displayed after a Bluetooth scan.	Communication has been activated with a “Device not connected”.	See cause and solution to the problem following a Bluetooth scan, “Device not connected”.
“No ABB device found” is displayed after a Bluetooth scan.	In the case of operating system Vista or 7, ABB Bluetooth adapter (BT030-USB o PR120/D-BT) not “coupled” to the PC.	If the operating system is Vista or 7, check to make sure that the device is present in “Devices and Printers” of the PC. If it is not, consult document “1SDH000903R0002 - EKIP Connect. Instructions for Bluetooth configuration”, available at http://www.abb.com/abblibrary/DownloadCenter/, rerun Ekip Connect, and repeat the scan.
“No Bluetooth stack found” is displayed after a Bluetooth scan.	Bluetooth antenna of the PC off.	Activate the Bluetooth antenna of the PC and repeat the scan.
“Ekip T&P not present” or “Ekip Programming not present” appear after an ABB key T&P scan.		You are asked to connect the connector or reinstall the driver. Make sure that the connector is connected: if it is not, connect it, click on **Cancel**, then shut-down and rerun Ekip Connect. Otherwise, if it is connected, see “Driver installation for ABB key and Bus scans” on page 44

Annex A: Connections

19. Architecture

Possible connections between release and Ekip Connect

Ekip Connect can be connected to a release by means of:

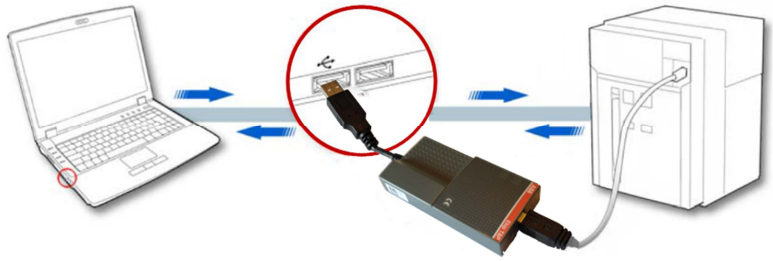
- point-to-point connections (serial ports, USB flash drives, Bluetooth antenna)
- connections to bus networks (serial Modbus and Ethernet)

The connections are made using only ABB accessories. Some releases need converters and adapter cable kits.
→ *Consult "Compatible devices and hardware requirements " on page 41 for further details.*

IMPORTANT: Use of accessories differing from those of ABB in point-to-point architecture can damage the release.

NOTE: the releases leave the factory with their addresses at zero. They must first be configured with a point-to-point connection and then with a bus connection.

Connection via Ekip T&P and Ekip Programming



This architecture is required for the test functions. Use the Ekip T&P test kit connected to one of the computer's USB flash drive ports on the one side and to the frontal test connector on the release on the other side.
Use the cables supplied with Ekip T&P to connect to the different test connectors of the various releases. For details about the accessories and cables required, consult *"Compatible devices and hardware requirements on page 41)*.

IMPORTANT: only use the cables supplied with the Ekip T&P converter. Do not use different cables from those supplied.

Connection via serial line

Use system communication modules (e.g.: PR122/P with module PR120/D-M) or integrated systems (e.g.: PR223EF).
You need a serial line converter to convert the RS485 line (release side) to the line available in the computer (e.g.: RS232, USB, Ethernet). Modbus RTU is the communication protocol used.
Connection to the system bus is required. Connection to the system bus is indicated by W1 or WS on the circuit diagram of the releases.

NOTE: for details about network configuration, refer to document "Communication via bus with ABB circuit-breakers", available at http://www.abb.com/abblibrary/DownloadCenter/ .

Connection via USB port

This architecture uses accessory BT030 USB connected to one of the computer's flash drive ports on the one side and to the frontal connector of the release on the other side.

Connection via Bluetooth

This architecture uses the external communication unit (Ekip Bluetooth, BT030, BT030 USB) or an internal communication module (PR120/D-BT).
The computer must have a Bluetooth device compatible with an updated Broadcom driver (integrated with an external adapter).
If the operating system is different from Vista and 7, the computer must have an integrated Bluetooth device with Broadcom driver, or a compatible external adapter.

IMPORTANT: for Bluetooth communication, configure the computer's Bluetooth device so that secure connection is not requested. To configure the computer's Bluetooth device, consult "*Errore. L'origine riferimento non è stata trovata.****" on page** *Errore. Il segnalibro non è definito.***.**

IMPORTANT: when the BT030 USB unit is connected to the computer with a USB flash drive cable, Bluetooth will be temporarily deactivated. Disconnect the cable from the computer and from the release to restore Bluetooth communication.

IMPORTANT: do not use PR120/D-BT and BT030/BT030 USB at the same time on the same release.

IMPORTANT: make sure that the computer's Bluetooth drivers are updated.

NOTE: for details about network configuration, refer to document "Communication via bus with ABB circuit-breakers", available at http://www.abb.com/abblibrary/DownloadCenter/ .

Co ction via Ethernet

Use the Ekip Com communication module that suits the network protocol in question (e.g.: Ekip Com Modbus TCP/IP and Ekip Com Ethernet/IP).

NOTE: for details about network configuration, refer to document "Communication via bus with ABB circuit-breakers", available at http://www.abb.com/abblibrary/DownloadCenter/ .

20. Compatible devices

Compatible devices and hardware requirements

The following table contains:

- the compatible protection releases.
- the possible types of connection.
- the accessory modules and ABB cables and converter required (if applicable).

Circuit-breaker	Release	Notes for the connections				
		ABB Key	**Serial**	**USB**	**Bluetooth**	**Ethernet**
All	SD030xx	-	3	-	-	-
	RCQ020	8	-	-	-	-
EMAX	PR112/PD	-	3	-	-	-
	PR113/PD	-	3	-	-	-
EMAX DC	PR122/DC	9	5	6	6	-
	PR123/DC	9	5	6	6	-
Emax 2	Ekip Dip	8	-	-	11	-
	Ekip Touch	8	2	-	11	10
	Ekip Hi-Touch	8	2	-	11	10
	Ekip G Touch	8	2	-	11	10
	Ekip G Hi-Touch	8	2	-	11	10
ISOMAX	PR212/P	-	1	-	-	-
NEW EMAX	PR121/P	9	-	6	-	-
	PR122/P	9	5	6	7	-
	PR123/P	9	5	6	7	-
NEW EMAX VF	PR122/VF	9	5	6	6	-
NEW MEGAMAX HF1	PR331/P-HF	9	-	6	6	-
	PR332/P-HF	9	-	6	6	-
NEW MEGAMAX HF2-3-4	P121/P-HF	9	-	6	6	-
	P122/P-HF	9	-	6	6	-
T7/T8	PR232/P	9	-	6	6	-
T7/T8/X1	PR331/P	9	-	6	6	-
	PR332/P	9	4	6	6	-
TMAX	PR222DS	9		6	6	-

	PR222DS-PD	9	3	6	6	-
	PR223DS	9	3	6	6	-
	PR223EF	9	3	6	6	-
Tmax XT	Ekip I	8	-	-	-	-
	Ekip LS/I	8	-	-	-	-
	Ekip LSI	8	2	-	-	-
	Ekip LSIG	8	2	-	-	-
	Ekip M-I	8	-	-	-	-
	Ekip M-LIU	8	-	-	-	-
	Ekip M-LRIU	8	2	-	-	-
	Ekip G-LS/I	8	-	-	-	-
	Ekip N-LS/I	8	-	-	-	-
X1	PR333/P	9	4	6	6	-

Notes:

1. RS485 converter, and PR212/D-M module.
2. RS485 converter, and Ekip Com module.
3. RS485 converter.
4. RS485 converter, and PR330/D-M module.
5. RS485 converter, and PR120/D-M module.
6. BT030-USB module.
7. BT030-USB or PR120/D-BT module (not to be used at the same time);
8. Ekip T&P converter and Ekip Programming.
9. Ekip T&P converter and adapter cable kit.
10. Ekip Com Modbus TCP/IP module and Ekip Com Ethernet/IP.
11. Ekip Bluetooth module.

NOTE: with the exception of the RS485 converter, the modules indicated are all ABB accessories.

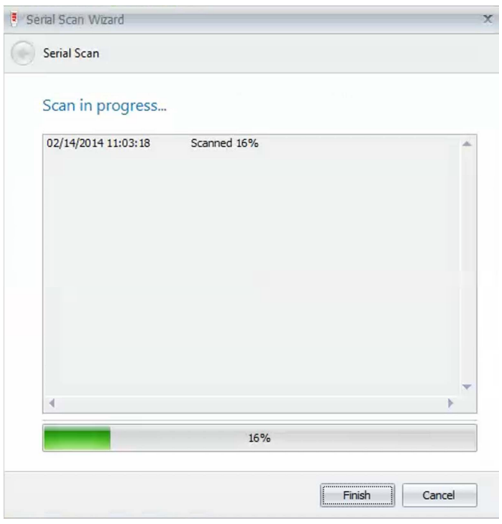
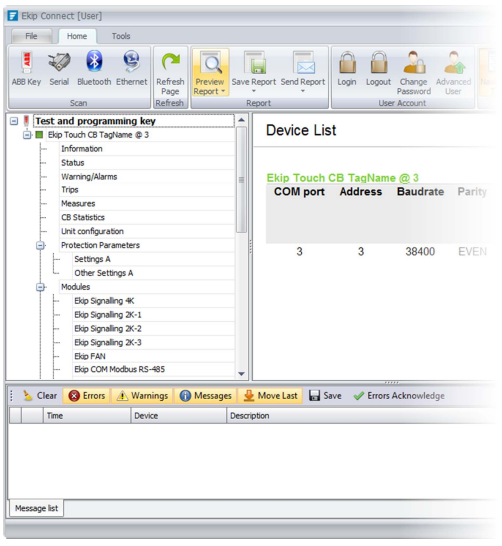
NOTE: the bus connection for certain releases may require the use of adapter cables. for details about the connection modes and converters required, refer to document "Communication via bus with ABB circuit-breakers", available at http://www.abb.com/abblibrary/DownloadCenter/ .

Annex B: Scanning procedure

21. Scanning via ABB key

How to start scanning via ABB key

The procedure for scanning in search of releases connected by means of ABB key (Ekip T&P or Ekip Programming) is described below.

Step	Action	Image
1	• Click on : Ekip Connect checks that ABB key is present: a window appears with the status bar. ***IMPORTANT: if the software fails to find the FTDI drivers when scanning is started, a window will appear asking for them to be installed. See "Driver installation for ABB key and Bus scans" on page 44.*** *NOTE: click on **Cancel to annul the scan.***	
2	After the scan, the page is updated with the information found about the release. *NOTE: if the scan terminates and no release has been found, consult "Problem solving" on page 37.*	

Driver installation for ABB key and Bus scans

When ABB key or serial scanning starts, the respective drivers must already be present. If the system is unable to install them on its own, comply with this procedure and install them in the manual mode:

IMPORTANT: rights of administration are required to install the drivers.

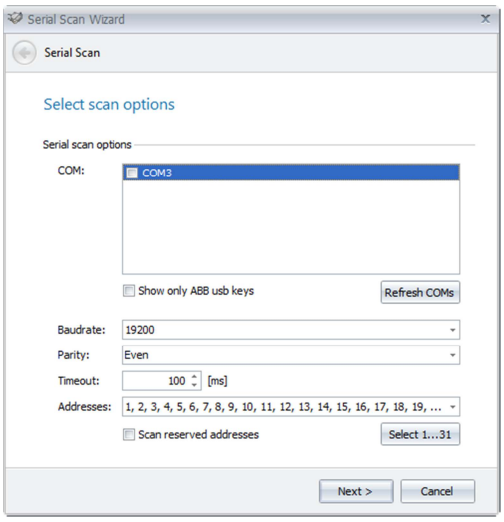
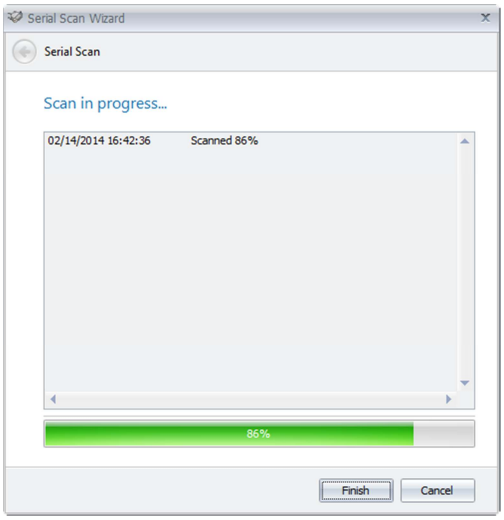
Step	Action
1	Click on **Ok** or **Install** in the window displayed: this will access a folder containing the x.x.x_Driver_Setup.exe executable.
2	Right-click on the executable and select **Run as administrator**: a window for automatic installation will appear for a few instants, after which it will close automatically.
3	It is advisable to repeat the action from step 2 to make sure that the drivers have all been installed.
4	Shut-down and rerun Ekip Connect.

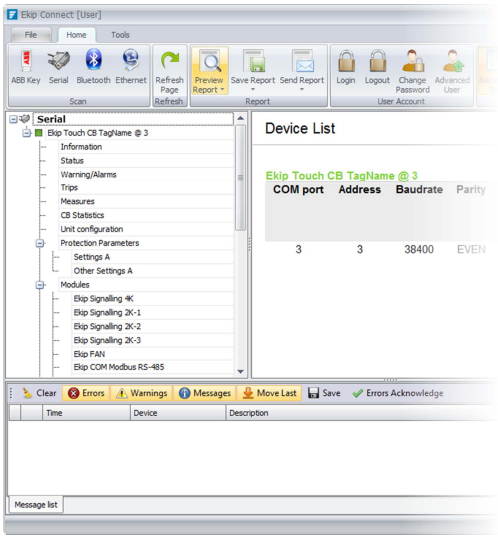
NOTE: if difficulties are encountered when the drivers are installed, consult the indications available at http://www.ftdichip.com/Support/Documents/InstallGuides.htm.

22. Serial bus scan

How to start scanning via Serial Bus

The procedure for scanning in search of releases connected by means of serial architecture is described below.

Step	Action	Image
1	• Click on : the **Select scan options** window will appear. • Enter the parameters. • Click on **Next** to start the scan. ***IMPORTANT: if the software fails to find the FTDI drivers when scanning is started, a window will appear asking for them to be installed. See "Driver installation for ABB key and Bus scans" on page 44.*** *→ Details about the parameters for serial communication via Bus can be consulted in "Serial scan parameters" on page 46.*	
2	A window appears with the status bar when the scan begins. *NOTE: click on **Cancel** to annul the scan.*	

3	After the scan, the page is updated with the information about the releases found. → *If the scan terminates and no release has been found, consult “Problem solving” on page 37.*	

Serial scan parameters

The parameters of the user-friendly procedure are described below.

*NOTE**:** where provided, if you are not certain about the values to be selected, choose **Select all in the list box.***

Parameter	Description
COM	To select one or more communication ports from among those indicated as available when Ekip Connect is run. ***IMPORTANT: click on Refresh COMs if a new port becomes available when Ekip Connect is executed.*** *NOTE: select **Show only ABB usb keys** to display only the ports with Ekip T&P communication units.*
Baudrate	To select one or more communication speeds (baud rate). The default value for ABB releases is 19200 bits/second.
Parity	To select one or more information package error monitoring modes. The default value for ABB releases is EVEN.
Timeout	To select the maximum wait time for a response from the releases. A good compromise between the necessary wait time and scan duration is 100 ms.
Addresses	To select one or more addresses from among those that identify the compatible releases. The default values for ABB releases are 3 and 247. To limit the scan to just addresses 1 to 31 (e.g.: for Modbus RTU protocols), click on **Select 1…31**. To expand the scan to addresses 248 to 254, click on **Scan reserved addresses.**

23. Scanning via Bluetooth

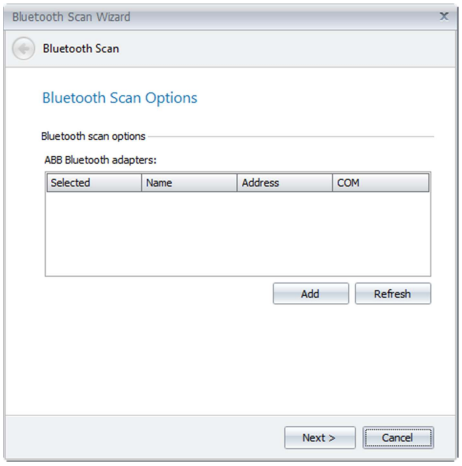
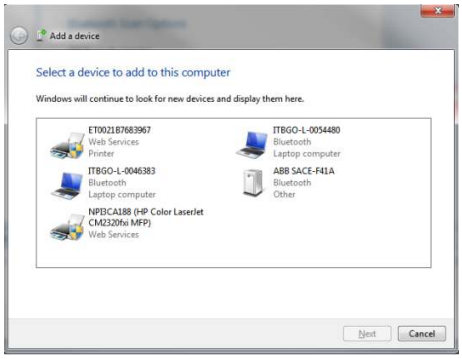
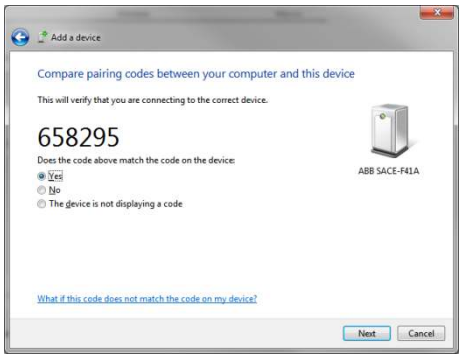
Bluetooth activation for Windows Vista and Windows 7

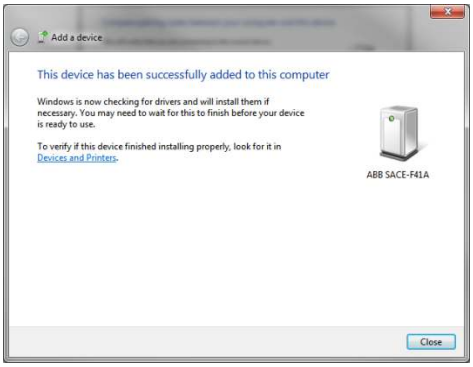
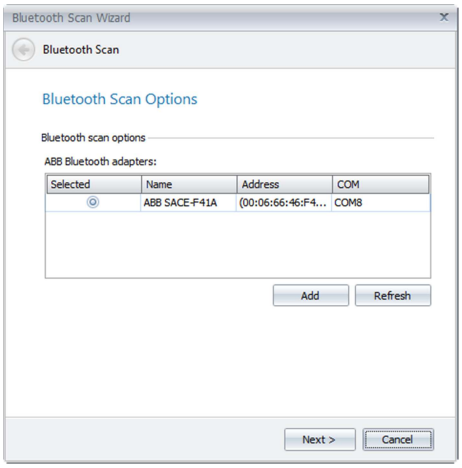
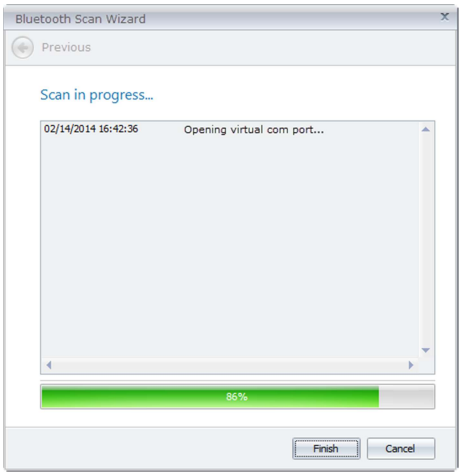
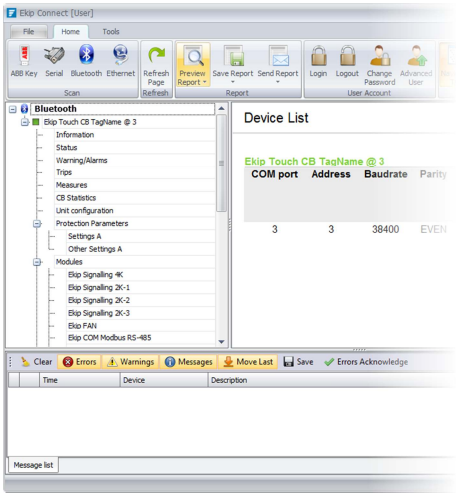
In order to activate Bluetooth communication via Ekip Connect, the Bluetooth device of the PC must have been configured.
To activate the Bluetooth antenna, consult document "1SDH000903R0002 - EKIP Connect. Instructions for Bluetooth configuration", at *http://www.abb.com/abblibrary/DownloadCenter/.*

How to start scanning via Bluetooth

The procedure for scanning in search of releases connected by means Bluetooth is described below.

NOTE: connection via Bluetooth allows one release to be connected at a time.

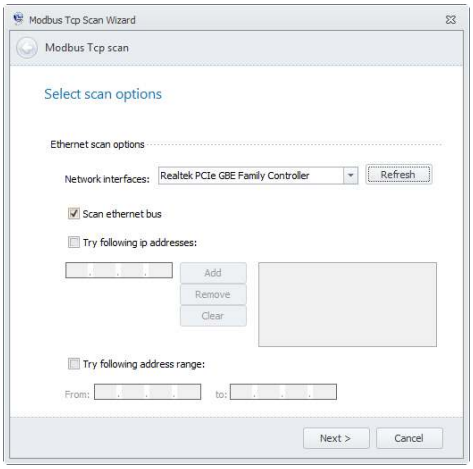
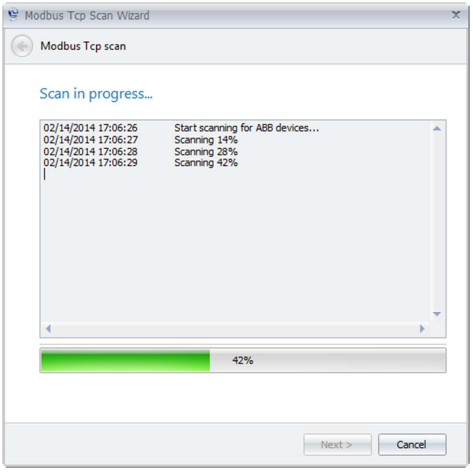
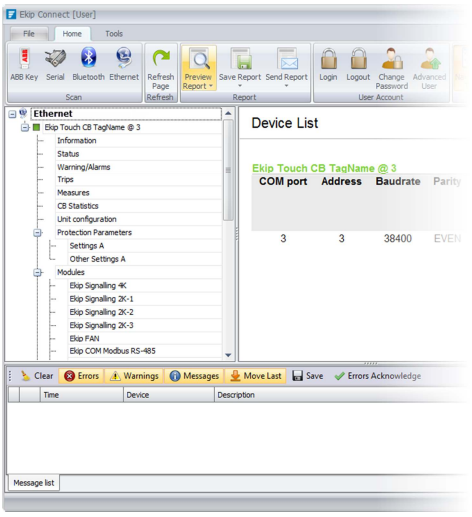
Step	Action	Image
1	• Click on : the **Bluetooth Scan Options** will appear. • Go on to step 5 if the Ekip Bluetooth device to be used is already in the list. • Click on **Add** to add a new device: the **Add a device window will appear.**	
2	Select the required device and click on **Next.**	
3	To confirm that the device is the correct one, compare the code on it with the one displayed. If they match, select **Yes** and click on **Next:** a message notifying that the procedure has been successful will appear.	

4	Click on **Close** to go back to the **Bluetooth Scan Option** window.	
5	• Click on **Refresh** to update the list of devices. • To start scanning, select the required device and click on **Next**.	
6	A window appears with the status bar when the scan begins. *NOTE: click on **Cancel** to annul the scan.*	
7	After the scan, the page is updated with the information found about the release. → *If the scan terminates and no release has been found, consult "Problem solving" on page 37.*	

24. Ethernet network scan

How to start scanning via Ethernet

The procedure for scanning in search of releases connected by means of Ethernet architecture is described below.

Step	Action	Image
1	• Click on : the **Select scan options** window will appear. • Enter the parameters. • Click on **Next** to start the scan. → *Details about the Ethernet communication parameters can be consulted in "Ethernet scan parameters" on page 50.*	
2	A window appears with the status bar when the scan begins. *NOTE: click on **Cancel** to annul the scan.*	
3	After the scan, the page is updated with the information about the releases found. → *If the scan terminates and no release has been found, consult "Problem solving" on page 37.*	

Ethernet scan parameters

The parameters of the user-friendly procedure are described below.

Parameter	Description
Network interfaces	Allows you to select the network port. ***IMPORTANT: click on Refresh if a new port becomes available when Ekip Connect is executed.***
Ethernet bus scan	Scanning is performed for the Ethernet bus.
Try following IP address	Scanning is performed for the specified IP address.
Try following address change	Scanning is performed for the specified address range.

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