MDE 226

Biffi Assistant

ELBS-20 – Biffi Assistant User Manual

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4	12/10/2017	Fifth Issue	*L.Piacenti*	*A. Battaglia*
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BIFFI ITALIA has taken every care in collecting and verifying the documentation contained in this Installation and User Manual.
The informations herein contained are reserved property of BIFFI ITALIA.

SUMMARY

Warning: For any information regarding actuator parameters or settings please refer to the relevant ELBS-20 and Actuator documentation.
Wrong parameter settings may cause actuator malfunctions.

Warning: All parameters changes not saved into the internal application database or sent to the actuator will be lost once the application is closed.

Warning: It is assumed that the installation, setting, commissioning, maintenance and repair works are carried out by qualified personnel and checked by responsible Specialists. Operating the actuator and the ELBS-20 could damage the actuator and cause personal injury.

Warning: Any repair work other than the operations outlined in this manual will be strictly reserved to qualified BIFFI ITALIA personnel or to personnel directly authorized by the Company itself.

Warning: Whenever the PC will be used in HAZARDOUS AREA as defined by the applicable rules, it is mandatory to check whether the PC nameplates indicate their suitability to an hazardous area, and the appropriate protection degree.

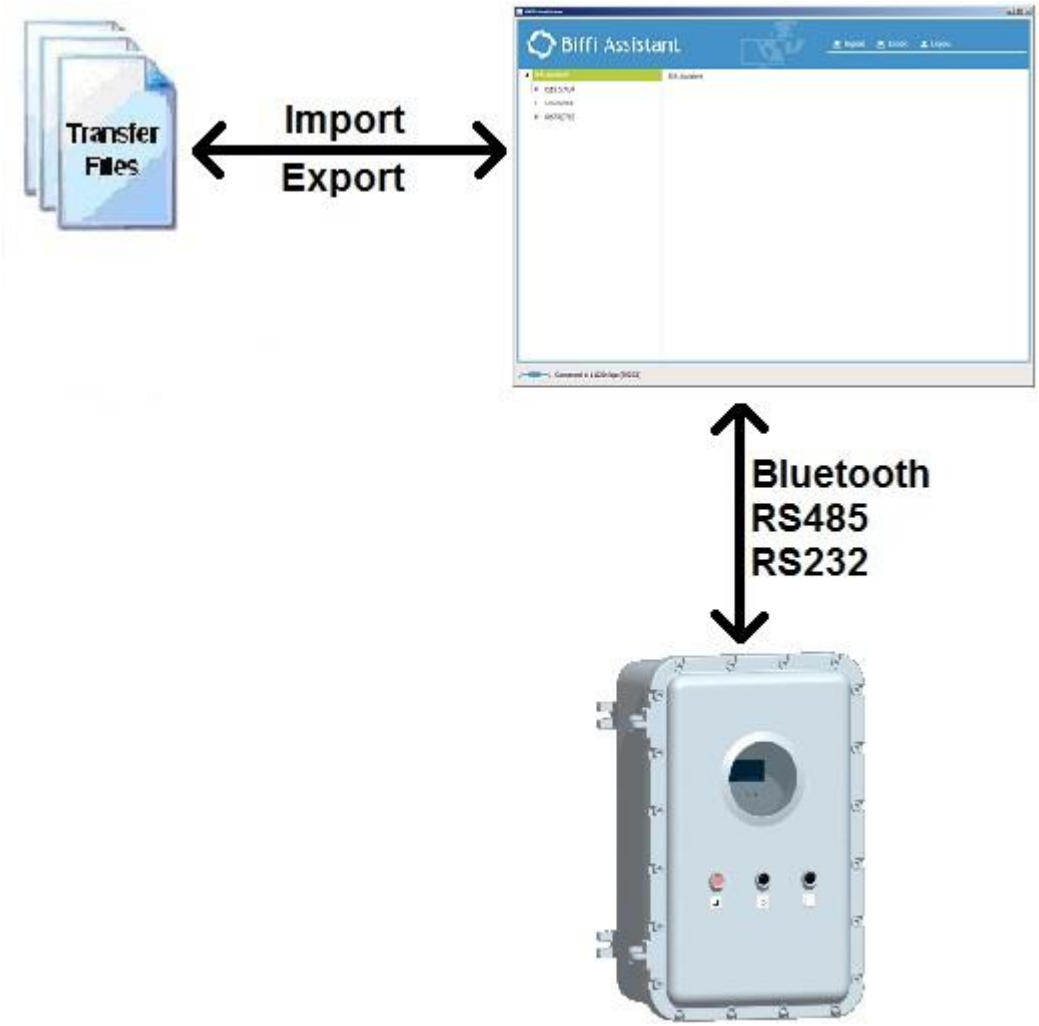
1 Reference Documents

[1]: ELBS-20 Installation and Operation Manual, BIFFI document MAN712

2 Introduction

The **Biffi Assistant** software tool is a software application for the PC that creates a versatile tool for configuring and maintaining multiple ELBS-20 devices.

The **Biffi Assistant** provides the ability to configure, diagnose and collect data for ELBS-20 devices on the PC / Windows platform (see APPENDIX C).



3 Communication Interface Selection and Login

Users may connect directly to an ELBS-20 device by using Biffi Assistant through Bluetooth, RS232 and RS485.

A direct connection with Biffi Assistant is convenient for users that need to configure or diagnose many ELBS-20 devices or users who require immediate detailed analysis on a large screen on-site. Note that Biffi Assistant may save "transfer files" to review at a later time.

Warning:

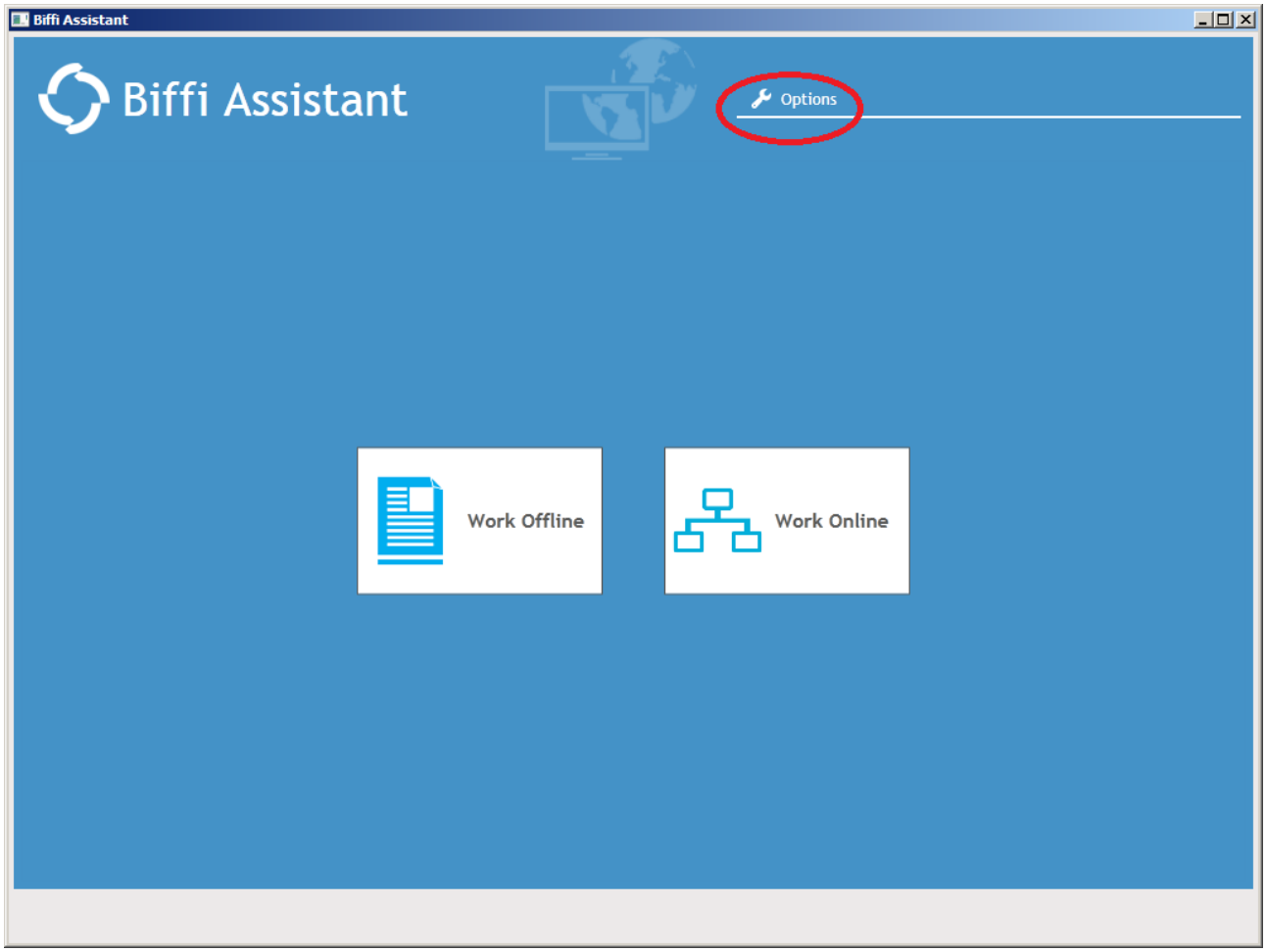
- It is recommended to use only one Serial Communication Interface (RS232, Bluetooth or RS485) per time to avoid configuration errors.
- It is mandatory to use just one of the following interfaces of the ELBS-20 per time, during the execution of the “Load Event List” command and the Export operation: RS232, Bluetooth or RS485 (see 7).
- It is mandatory not to use the Modbus interface, for reading events data, during the execution of the “Load Event List” command (see 7).

Important: The ELBS-20 automatically inhibits the using of the Local Operator Interface when one Biffi Assistant connection (RS232, Bluetooth or RS485) is active.

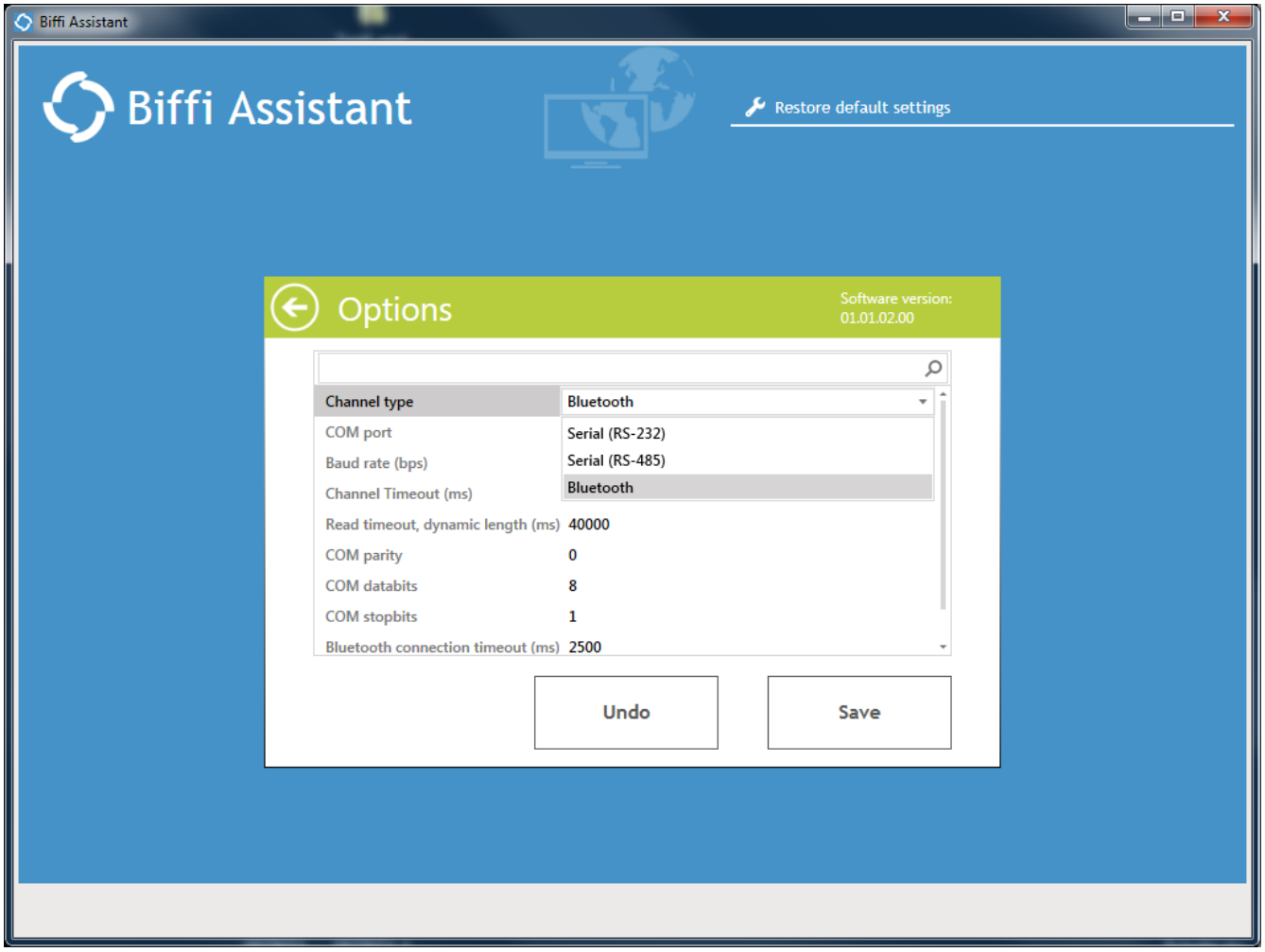
3.1 Interface Selection and Settings

When the Biffi Assistant starts, the following screen appears.

Left-Left-click of the mouse on “Options”, for setting the Communication Interface.



Select the Communication Interface/Channel Type (RS232, RS485 or Bluetooth).
On the right corner of “Options” it is indicated the SW version of Biffi Assistant.



According to the selected “Channel Type”, set the parameters as follows (*):

	RS232	Bluetooth	RS485
COM port	set the used COM	-	set the used COM
Baud Rate (bps)	115200 (fixed)	115200 (fixed)	19200 (fixed)
Channel Timeout (ms)	2000	2000	2000
Read timeout, dynamic length (ms)	100000	100000	250000
COM parity	0 (fixed)	0 (fixed)	0 (fixed)
COM databits	8 (fixed)	8 (fixed)	8 (fixed)
COM stopbits	1 (fixed)	1 (fixed)	1 (fixed)
Bluetooth connection timeout (ms)	-	2500	-
Language	en (fixed)	en (fixed)	en (fixed)

Left-click of the mouse on “Save” for applying the setting otherwise left-click of the mouse on “Undo”.
The selected Interface, with its settings, will be used by the Biffi Assistant, for the connection with the device.

Before starting the connection, verify that the selected interface is enabled (see [1]).
For restoring the default settings, left click of the mouse on “Restore default settings”.

(*) it is indicated the typical value of the parameters. In some cases (PC with low performance) it could be necessary to increase the value of the following parameters: “Channel Timeout”, “Read timeout, dynamic length” and “Bluetooth connection timeout”.

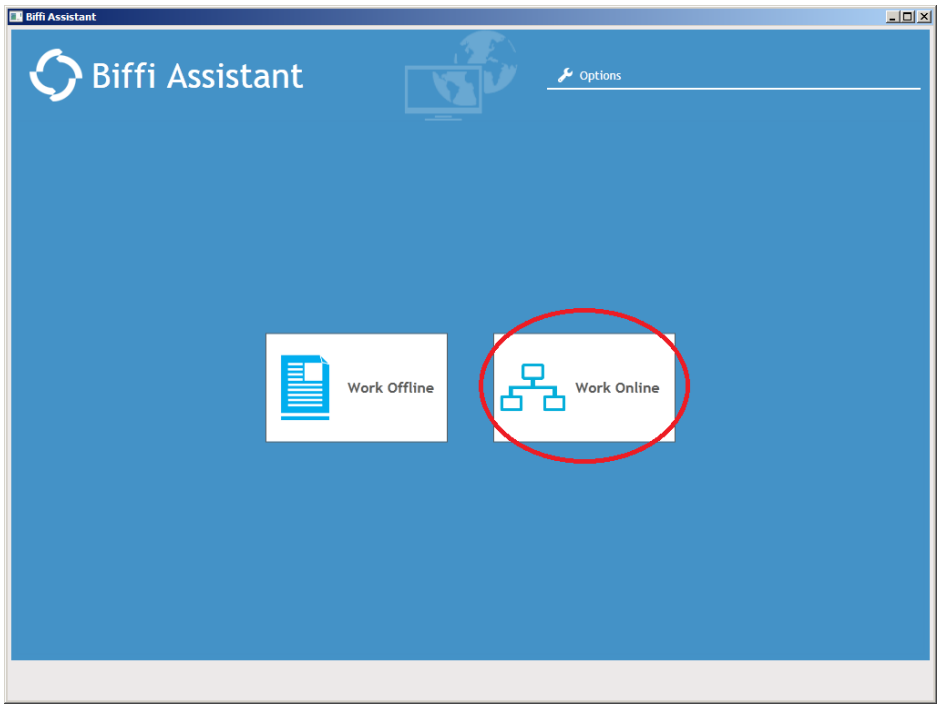
3.2 Login and Connection

See 3.1 to select the Communication Interface and to set it correctly.

3.2.1 RS232 and RS485 connection

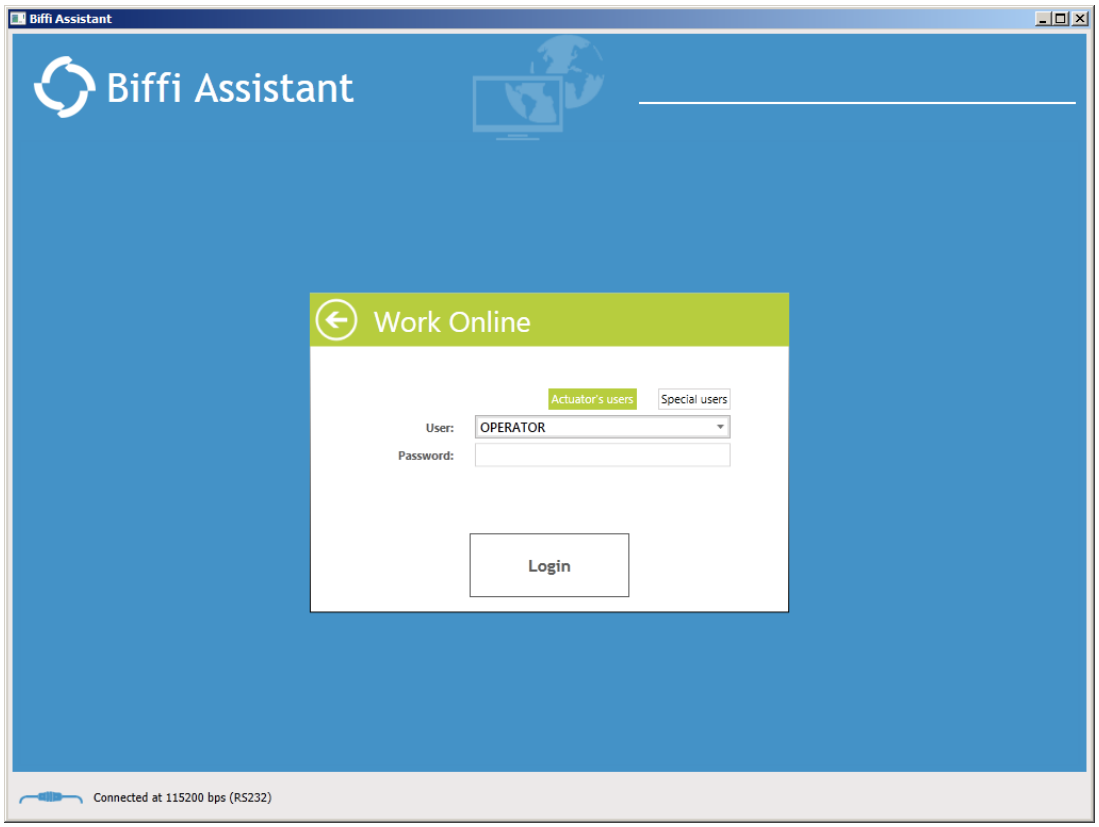
It is supposed that the cable connection is correctly made.
For the RS232 connection see APPENDIX A and [1]. For the RS485 connection see [1].

Left-click of the mouse on “Work Online“, for starting the connection with the ELBS-20.

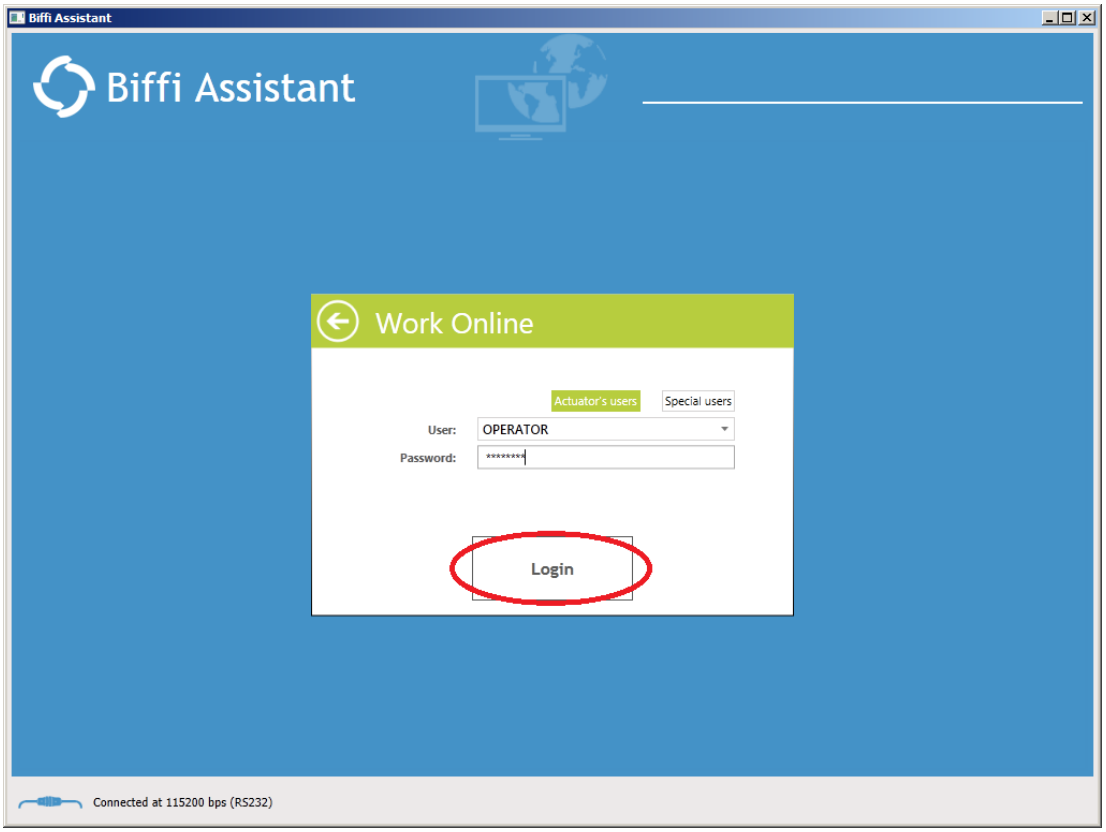


The “preliminary” connection starts.

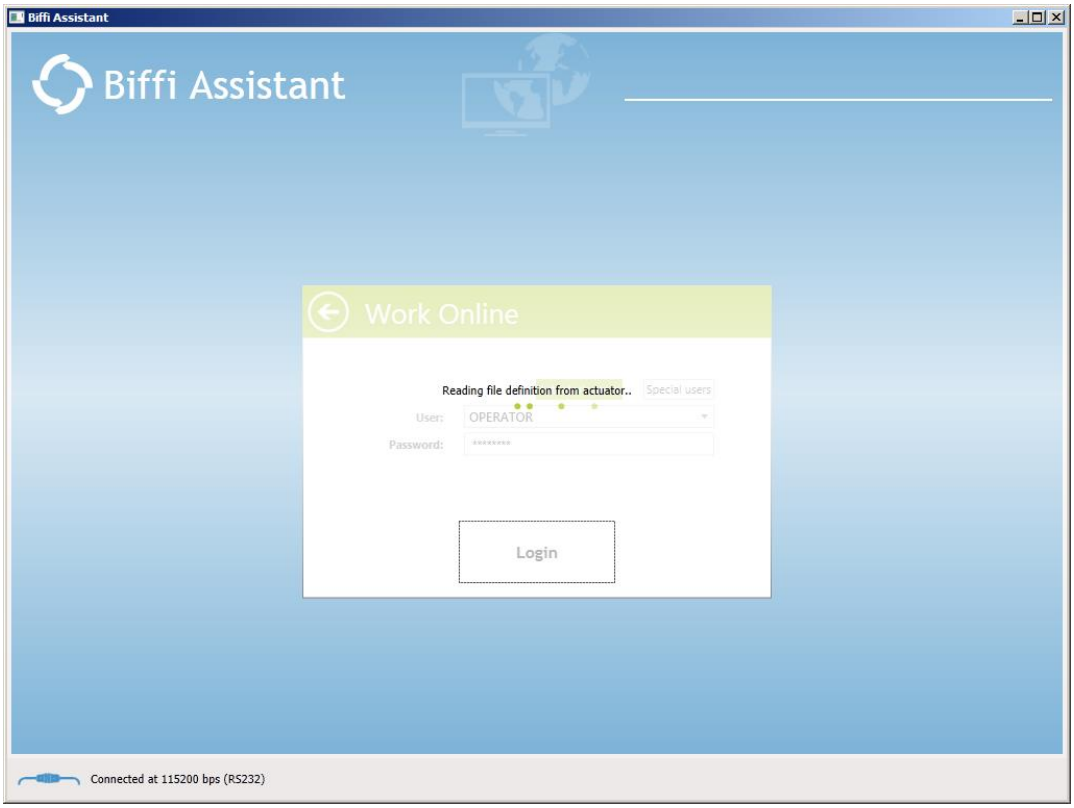
Wait for the end of the “preliminary” connection until the Login screen queries the user for a “User” and a “Password”.



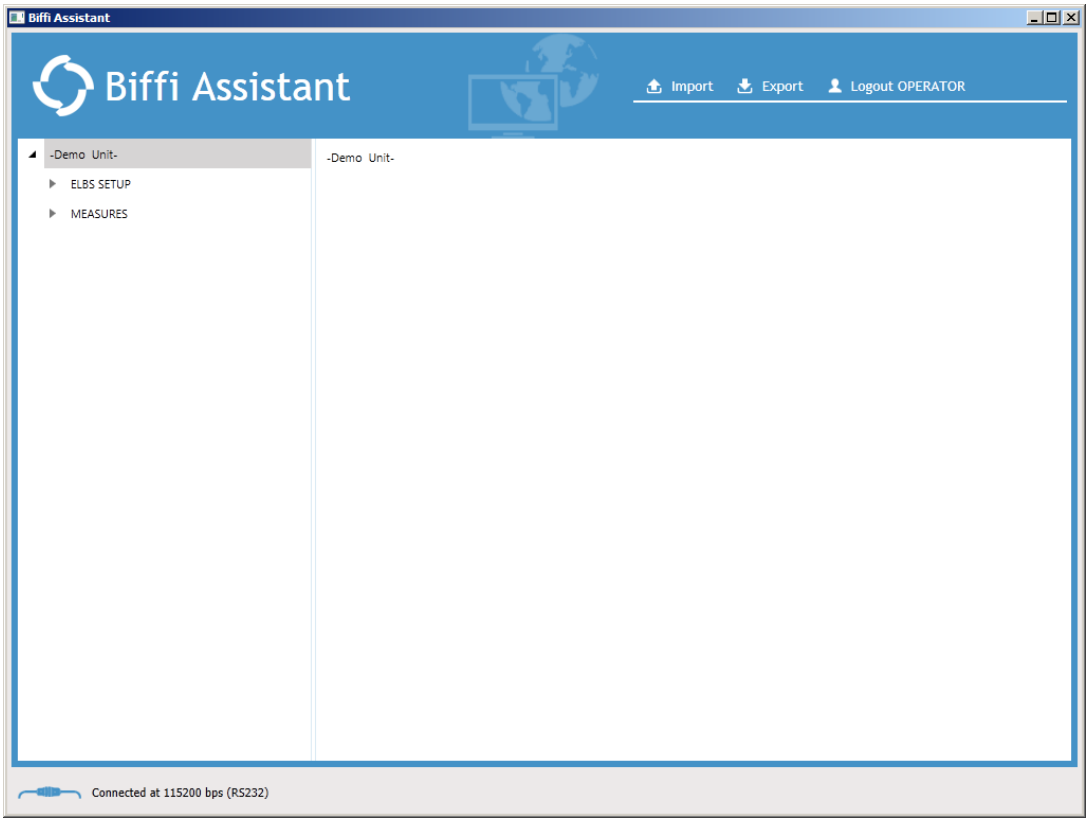
To login, select the “User” (see 3.3 for details), insert the password and left-click of the mouse on “Login” (or press ENTER). To cancel the Login, left-click of the mouse on the left arrow.



If the password is correct the connection with the ELBS-20 starts.



When the ELBS-20 is connected (“User” = OPERATOR) the following screen appears.

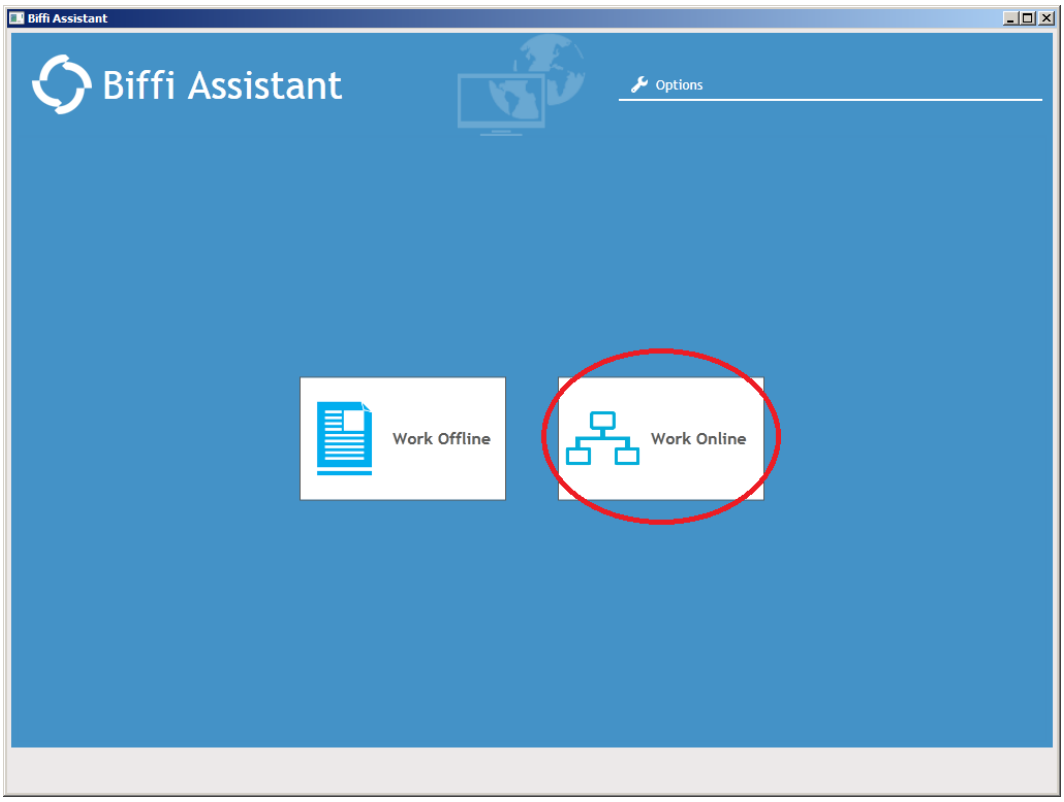


For Logging out, left-click of the mouse on “Logout *User Level*”.

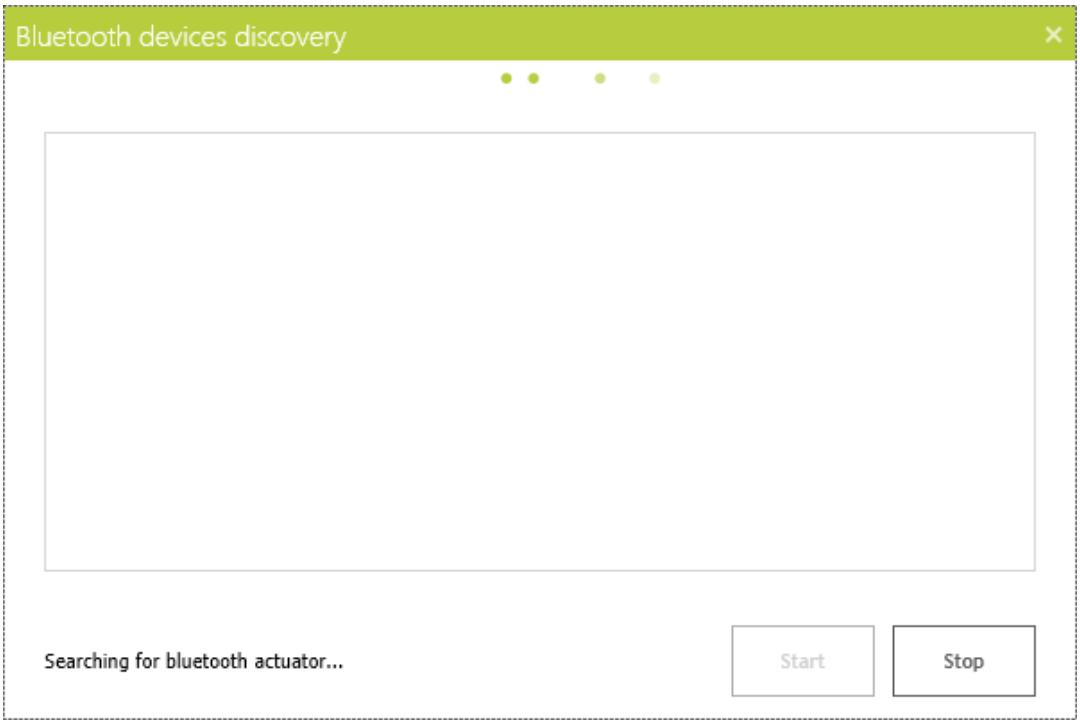
3.2.2 Bluetooth connection

For the Bluetooth, to operate properly, bring the PC to within 10 meters of the ELBS-20 device. Note that Bluetooth configuration is provided by your Bluetooth hardware manufacturer (see APPENDIX B for the approved USB/Bluetooth adapters).

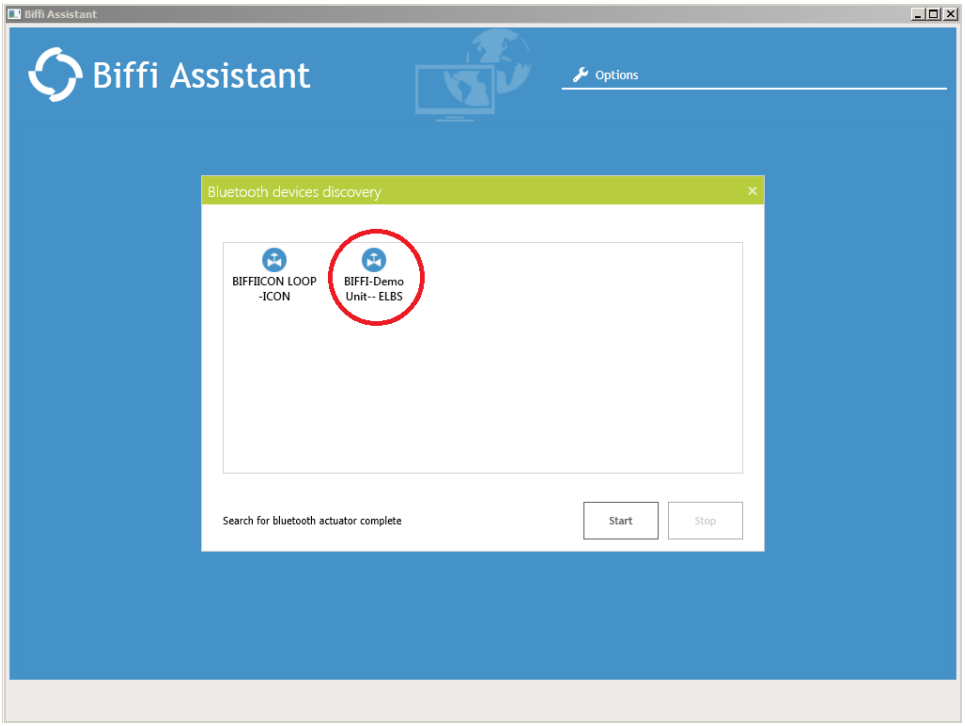
1) Left-click of the mouse on “Work Online“, for starting the connection with the ELBS-20.



2) Left click of the mouse on “Start”, for searching the Bluetooth devices.



3) Double Left-click of the mouse on the desired device, for starting the connetion.



At this point, depending on the Bluetooth stack of the laptop and on the Bluetooth module installed into the device, the following three different connection sequences can occur:

- Direct connection to the Device Password page (paragraph 3.2.2.1)
- Notice of the Bluetooth Connection before Device Password page (paragraph 3.2.2.2)
- Request of Bluetooth password before Device Password page (paragraph 3.2.2.3)

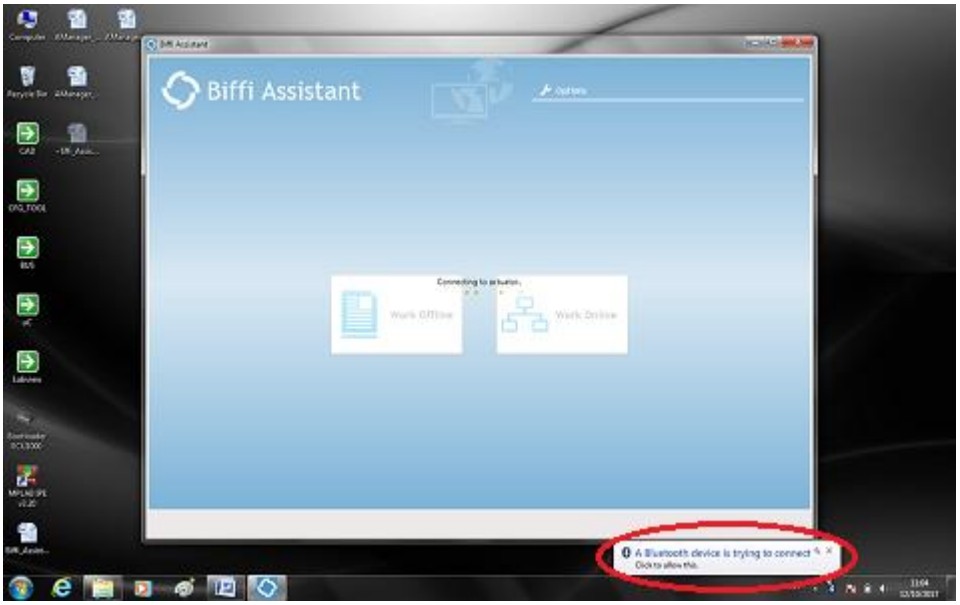
3.2.2.1 Direct connection to the Device Password page

The “preliminary” connection starts.

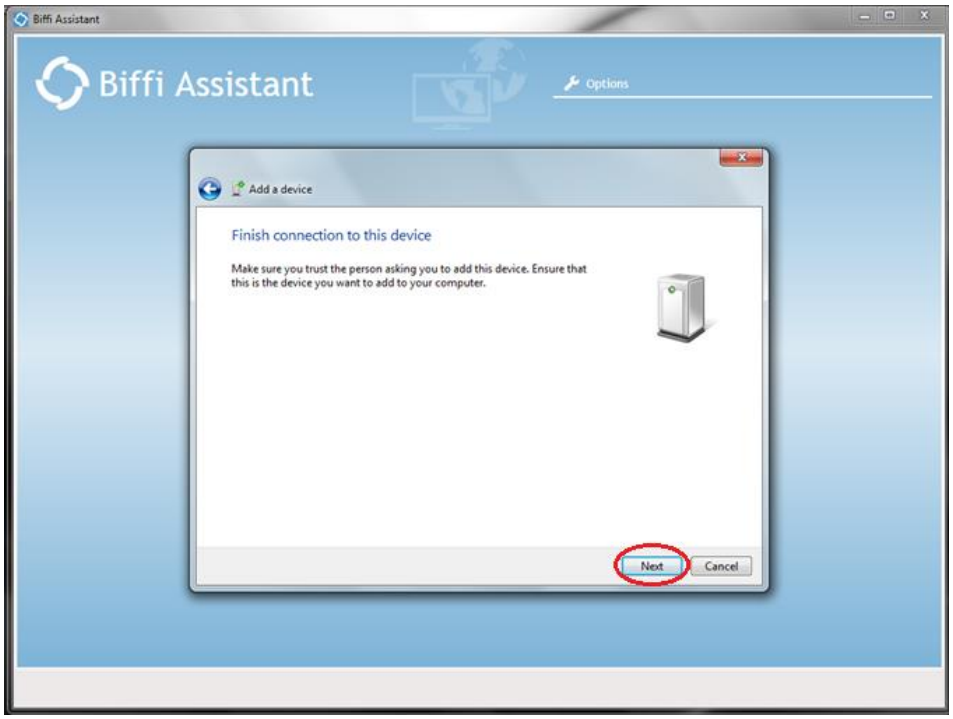
Go to step 4).

3.2.2.2 Notice of the Bluetooth Connection before Device Password page

Left click of the mouse on the message that appear in the bottom on the right.



Left click of the mouse on the “Next” button.

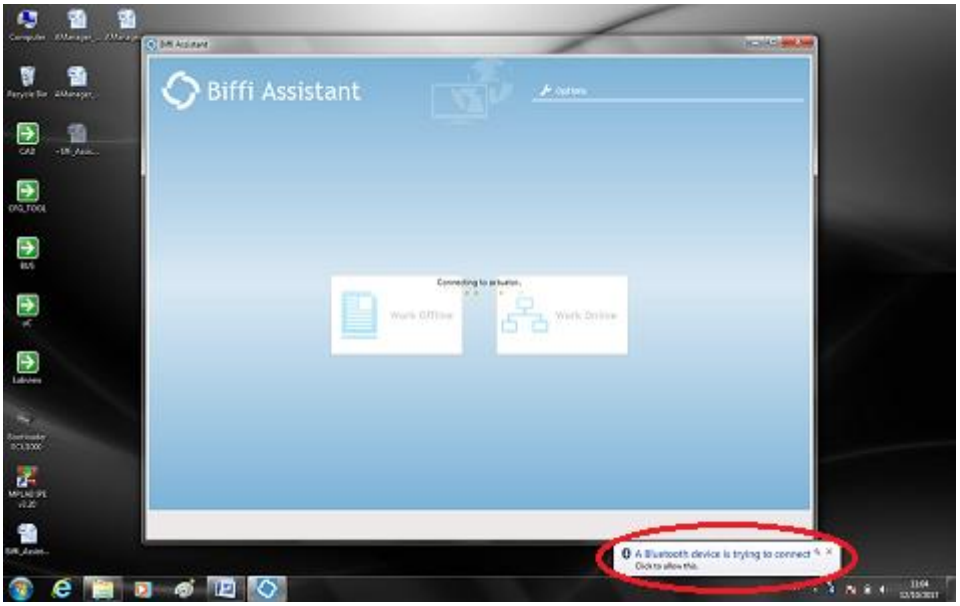


Left click of the mouse on the “Close” button.

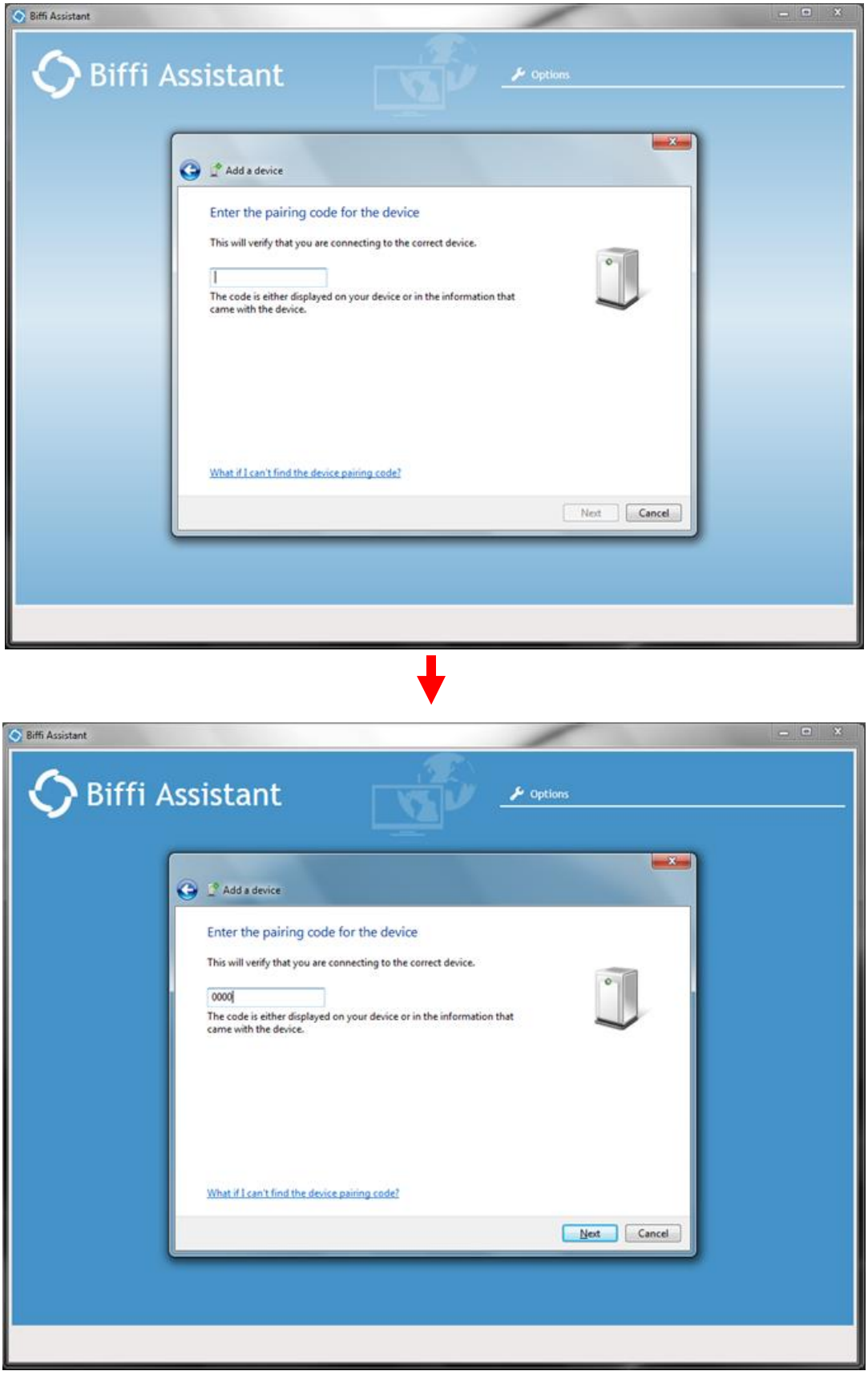
Go to step 4).

3.2.2.3 Request of Bluetooth password before Device Password page

Left click of the mouse on the message that appear in the bottom on the right.



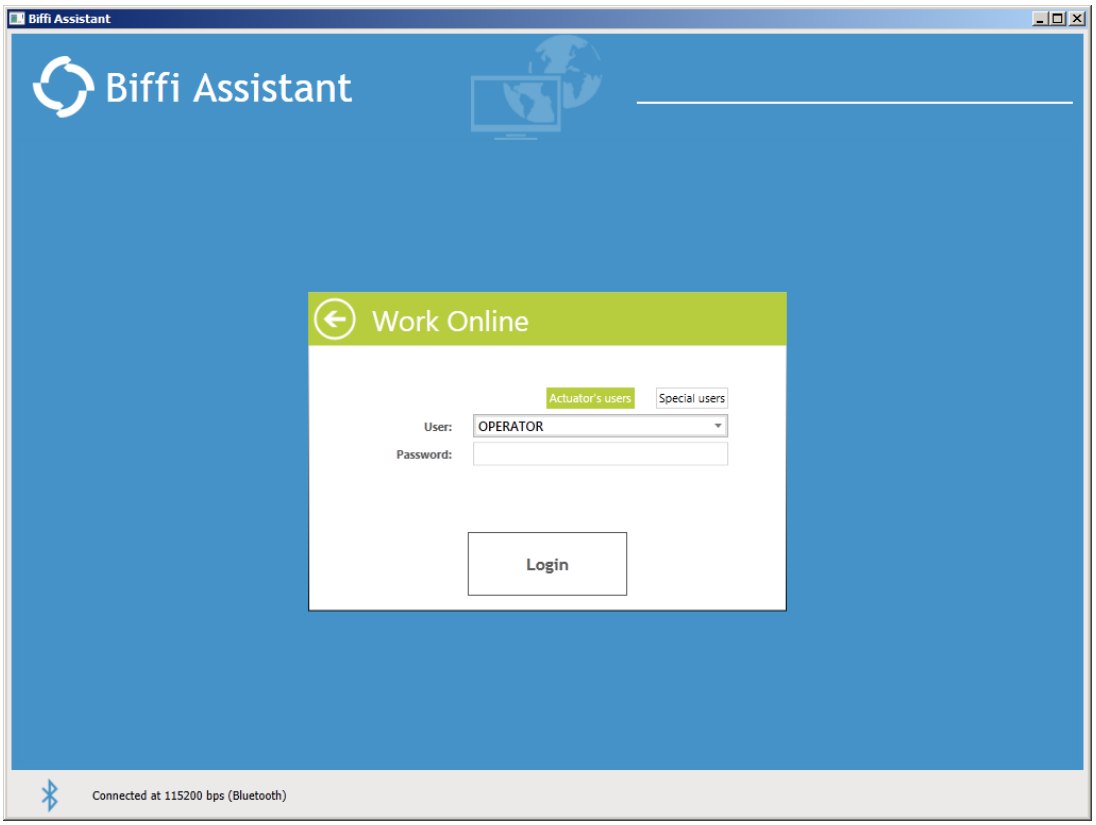
Insert the password “0000” and then click on the “Next” button.



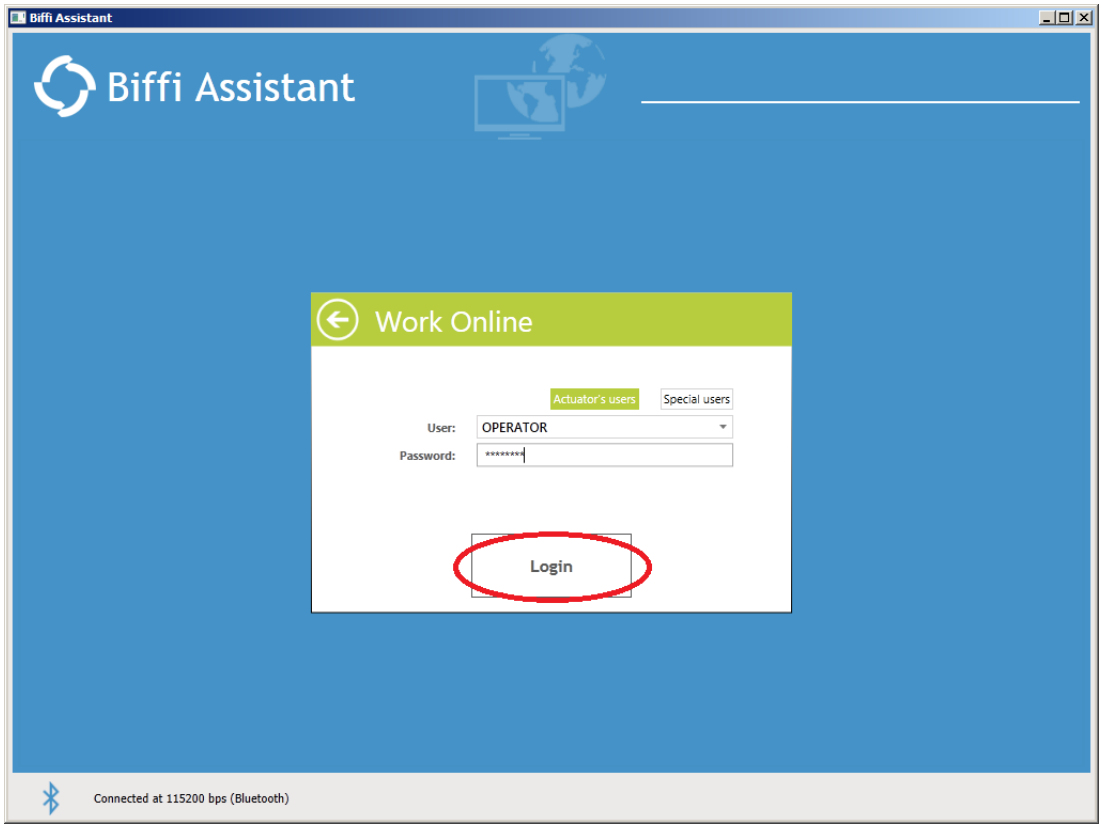
Left click of the mouse on the “Close” button.

Go to step 4).

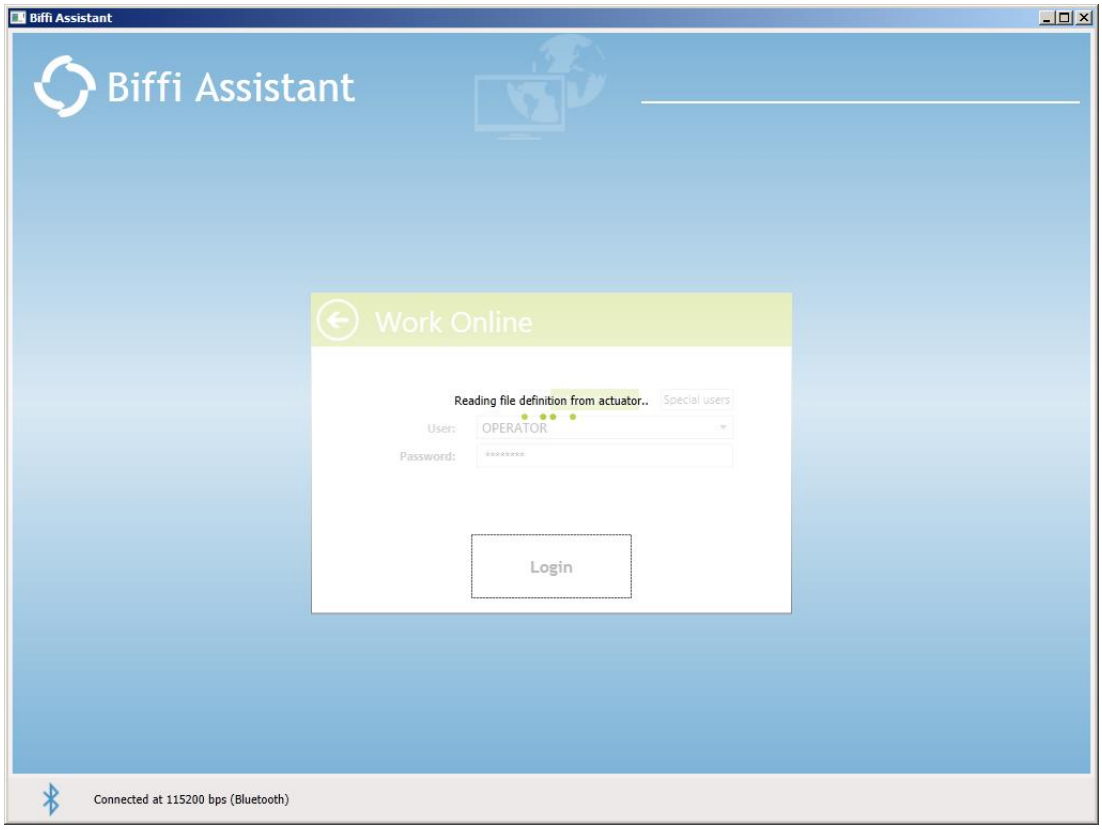
4) Wait until the end of the “preliminary” connection and the Login screen queries the user for a “User” and a “Password”.



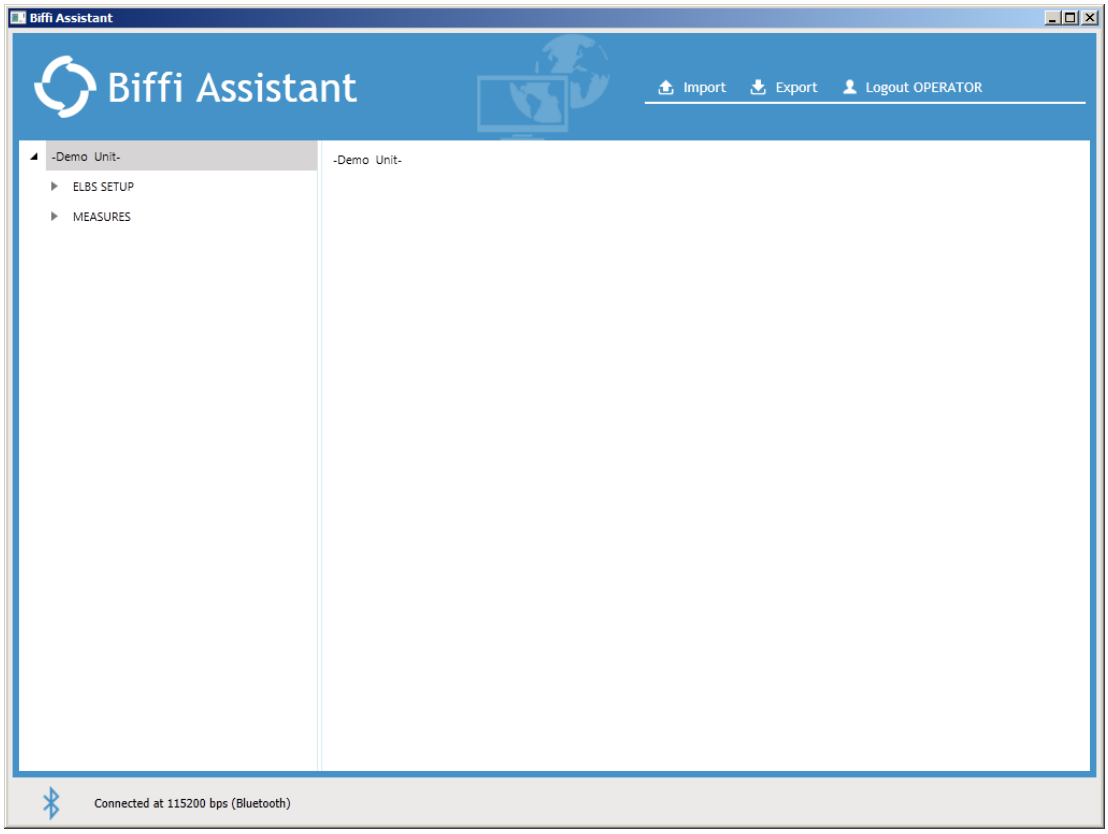
5) To login, select the “User” (see 3.3 for details), insert the password and left-click of the mouse on “Login” (or press ENTER). To cancel the Login left-click of the mouse on the left arrow.



6) If the password is correct the connection with the ELBS-20 starts.



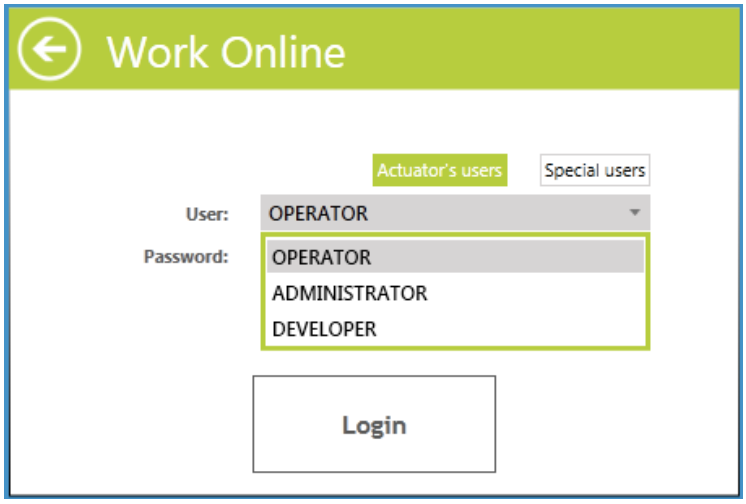
7) When the ELBS-20 is connected (“User” = OPERATOR) the following screen appears.

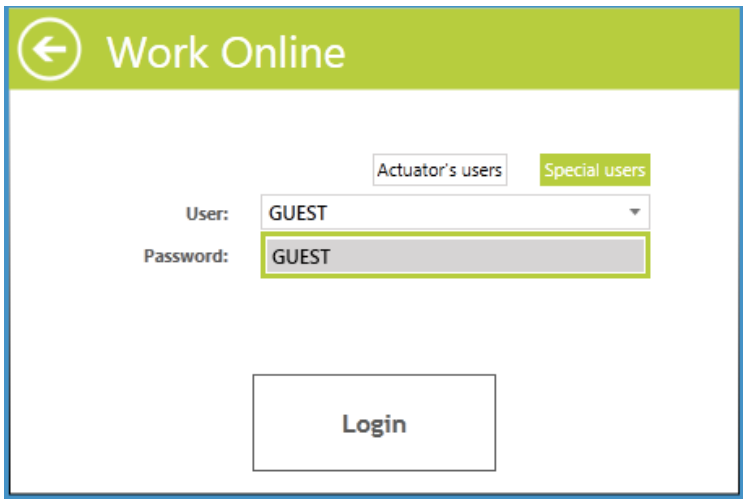


For Logging out, left-click of the mouse on “Logout *User Level*”.

3.3 User Levels (Login)

For logging in with the ELBS-20, it is possible to select four different “User”: **Operator** (Actuator’s users), **Administrator** (Actuator’s users), **Developer** (Actuator’s users) and **Guest** (Special users).





Guest: Guest level may not configure or alter device in any way but is allowed to export all the configuration parameters stored on the ELBS-20. This authorization level is ideal for technicians with little or no training or authority for changing configurations. This is the lowest level of authorization and does not allow the device configuration to be changed.

Operator: Operator level may configure the device. A subset of parameters is available. User level authority is typically the technician with responsibility for maintaining and updating ELBS-20 configuration. It is possible to export the configuration parameters (subset) and the graphs stored on the ELBS-20.

Administrator: Special authorization appropriate for Biffi authorized technician. This level allows a representative of Biffi to modify all the configuration parameters of the ELBS-20.

Developer: Special authorization appropriate for Biffi Factory personnel. This authorization allows the user to use specific utilities and should never be used by the end customer.

4 Biffi Assistant Functions

Important:

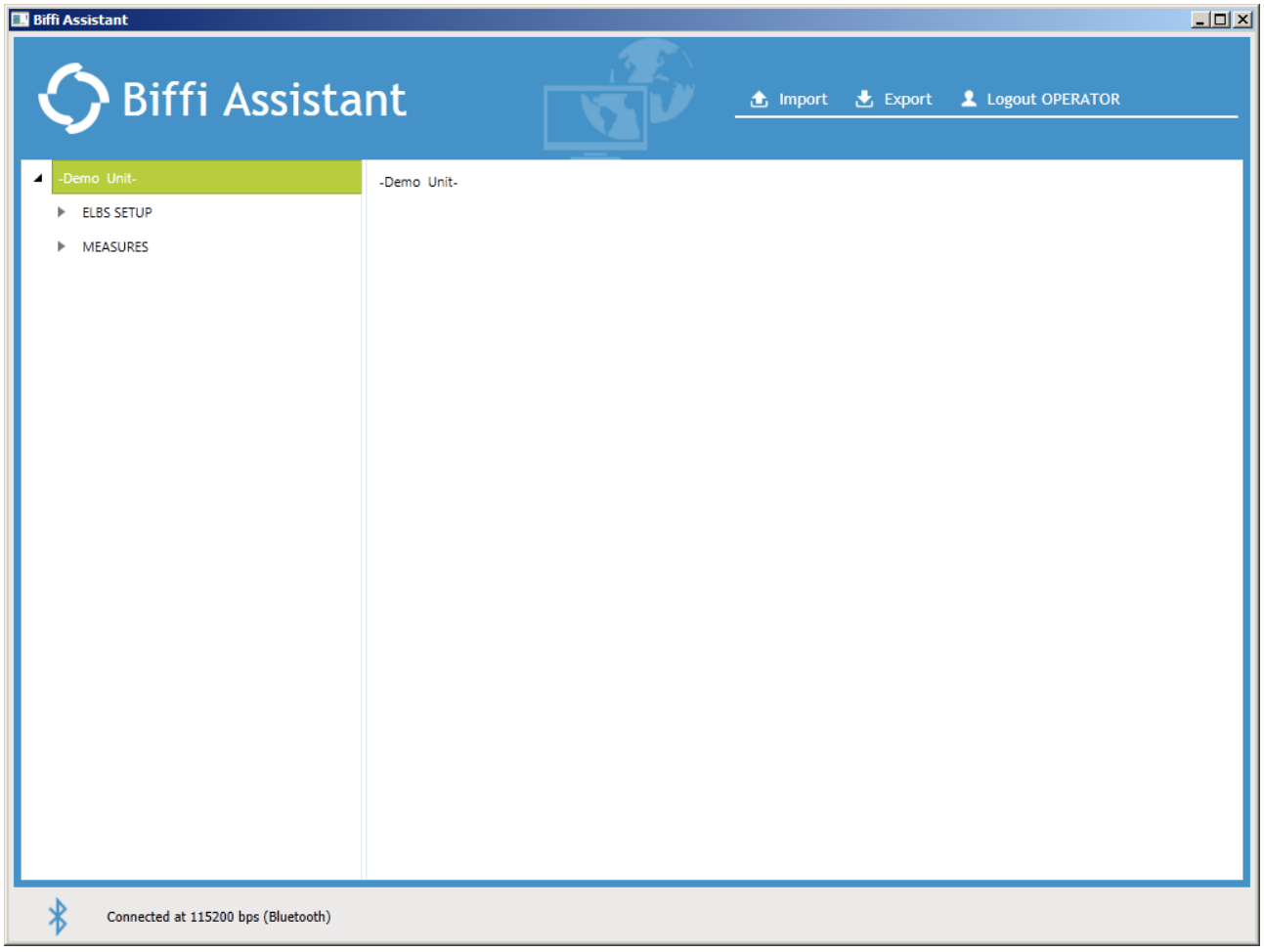
- It is recommended to use only one Serial Communication Interface (RS232, Bluetooth or RS485) per time to avoid configuration errors.
- It is mandatory to use just one of the following interfaces of the ELBS-20 per time, during the execution of the “Load Event List” command and the Export operation: RS232, Bluetooth or RS485 (see 7).
- It is mandatory not to use the Modbus interface, for reading events data, during the execution of the “Load Event List” command (see 7).

Important: The ELBS-20 automatically inhibits the using of the Local Operator Interface when one Biffi Assistant connection (RS232, Bluetooth or RS485) is active.

4.1 Navigate through the Biffi Assistant Menus

4.1.1 Main Menu Name

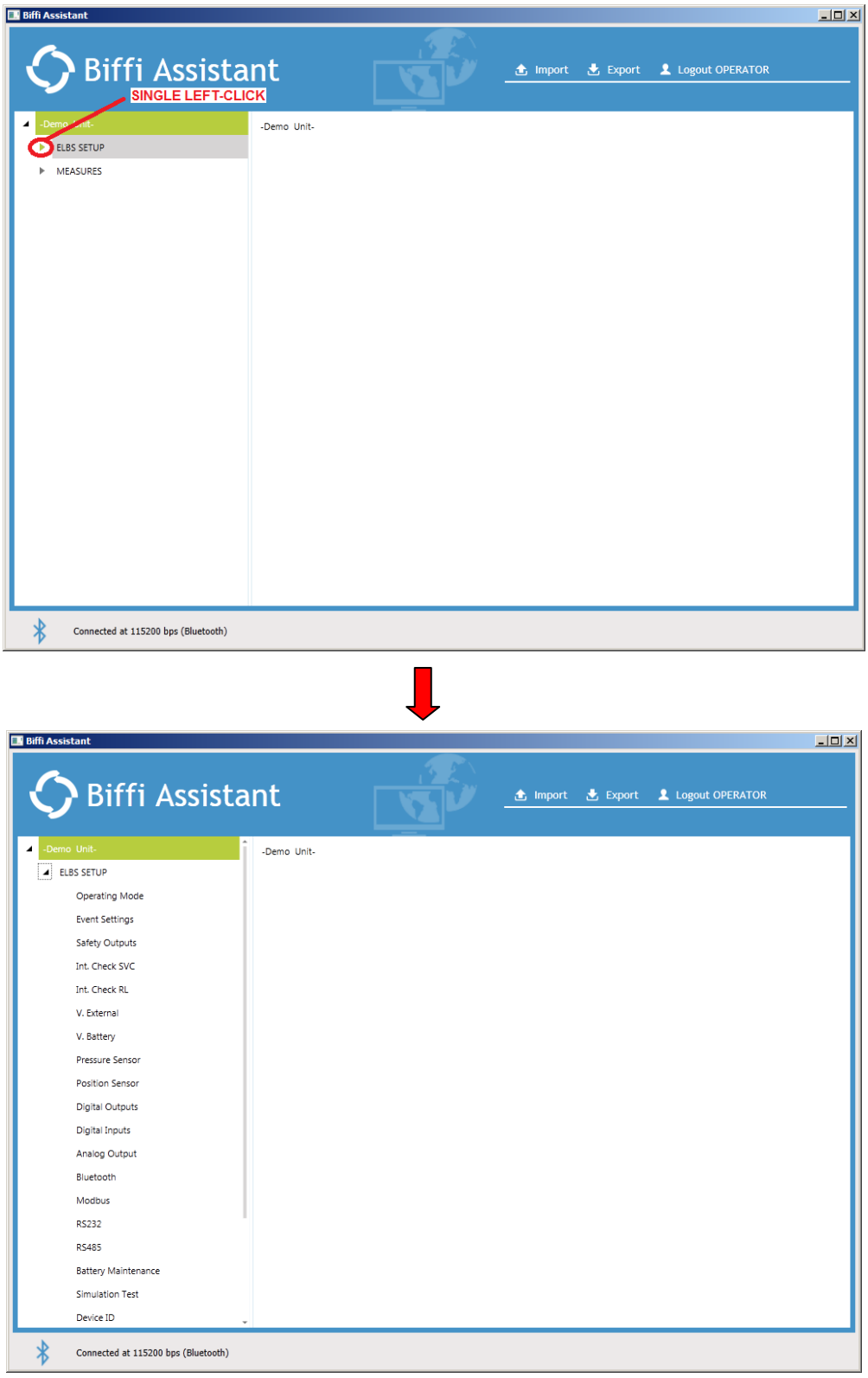
The name of the Main Menu is determined by the “Bluetooth Tag Name” parameter (see 6 and [1]).
In the screen below it is “-Demo Unit-“.

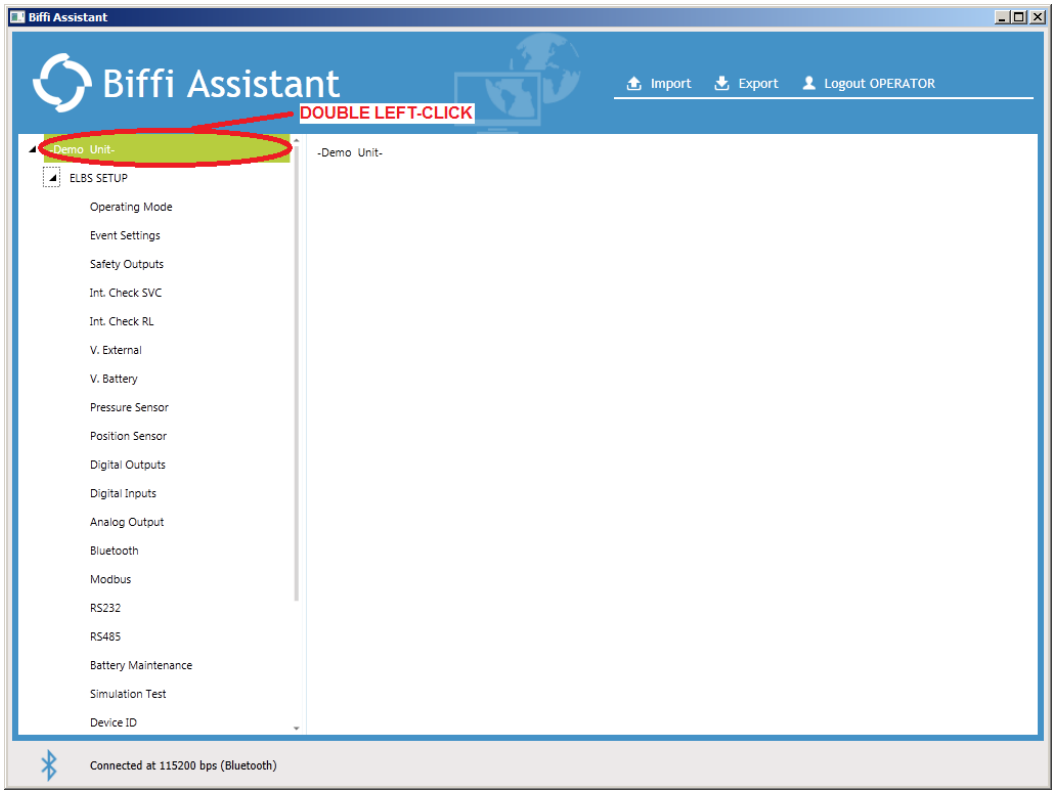


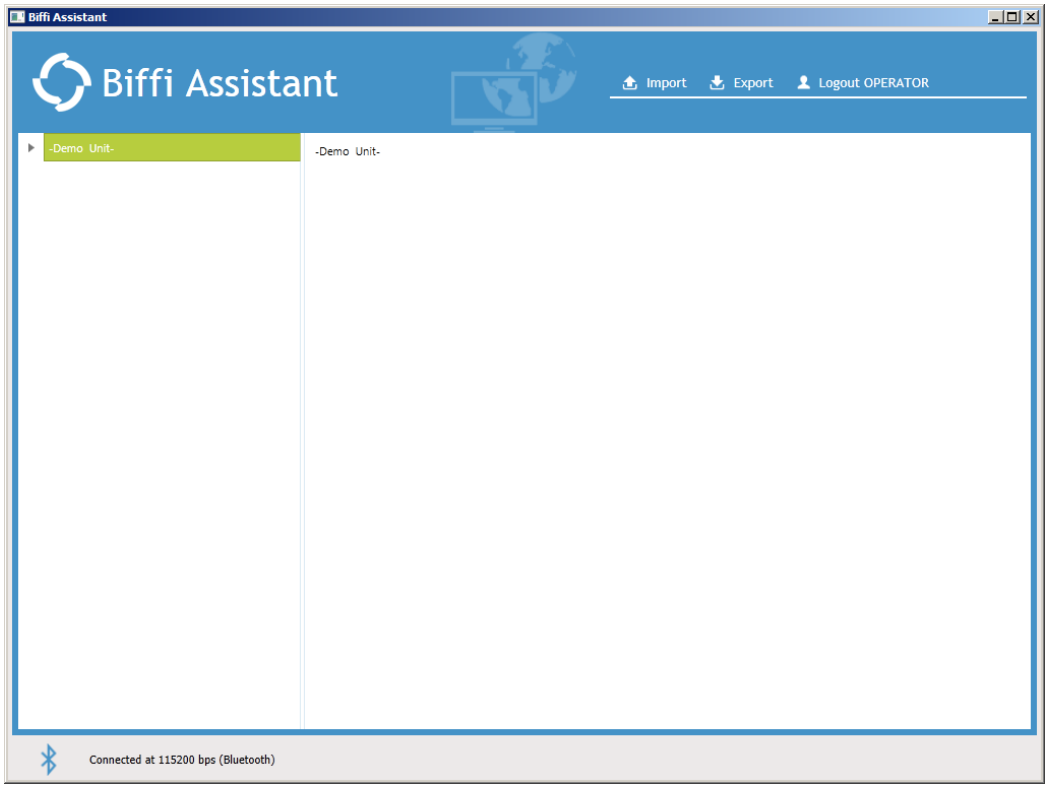
4.1.2 Minimize/Maximize Menus

For minimizing or maximizing the Menus of the Biffi Assistant there are two possible ways:

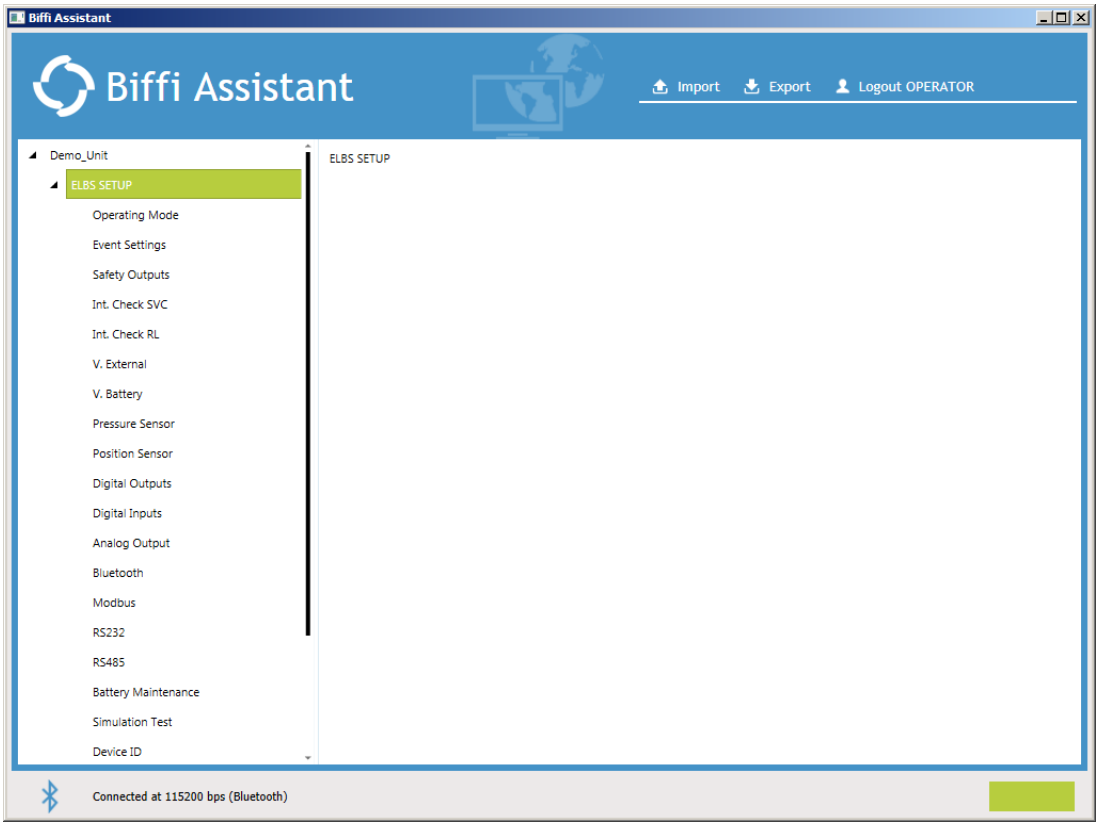
- Single left-click of the mouse on the arrow on the left of the Menu Name
- Double left-click of the mouse on the Menu Name

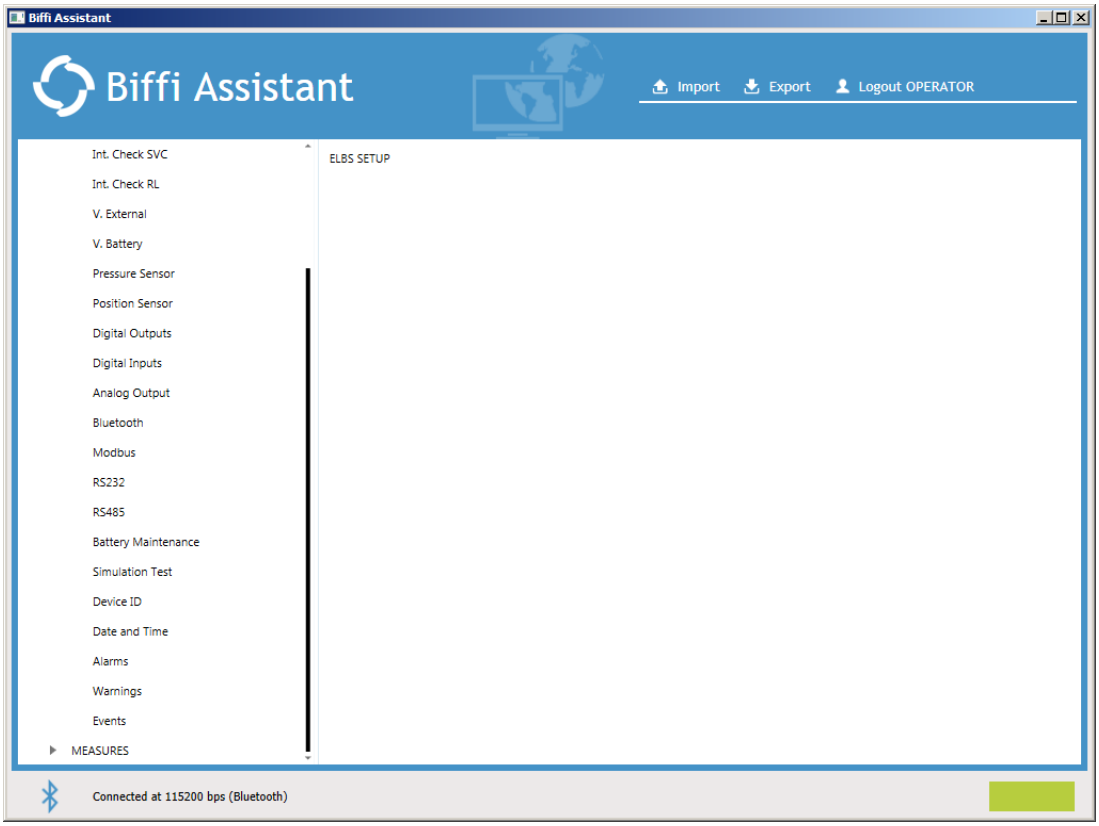



Biffi Assistant
Biffi Assistant
Import
Export
Logout OPERATOR
DOUBLE LEFT-CLICK
-Demo Unit-
ELBS SETUP
Operating Mode
Event Settings
Safety Outputs
Int. Check SVC
Int. Check RL
V. External
V. Battery
Pressure Sensor
Position Sensor
Digital Outputs
Digital Inputs
Analog Output
Bluetooth
Modbus
RS232
RS485
Battery Maintenance
Simulation Test
Device ID
-Demo Unit-
Connected at 115200 bps (Bluetooth)


Biffi Assistant
Biffi Assistant
Import
Export
Logout OPERATOR
-Demo Unit-
-Demo Unit-
Connected at 115200 bps (Bluetooth)

For moving inside a Menu, use the scroll bar.



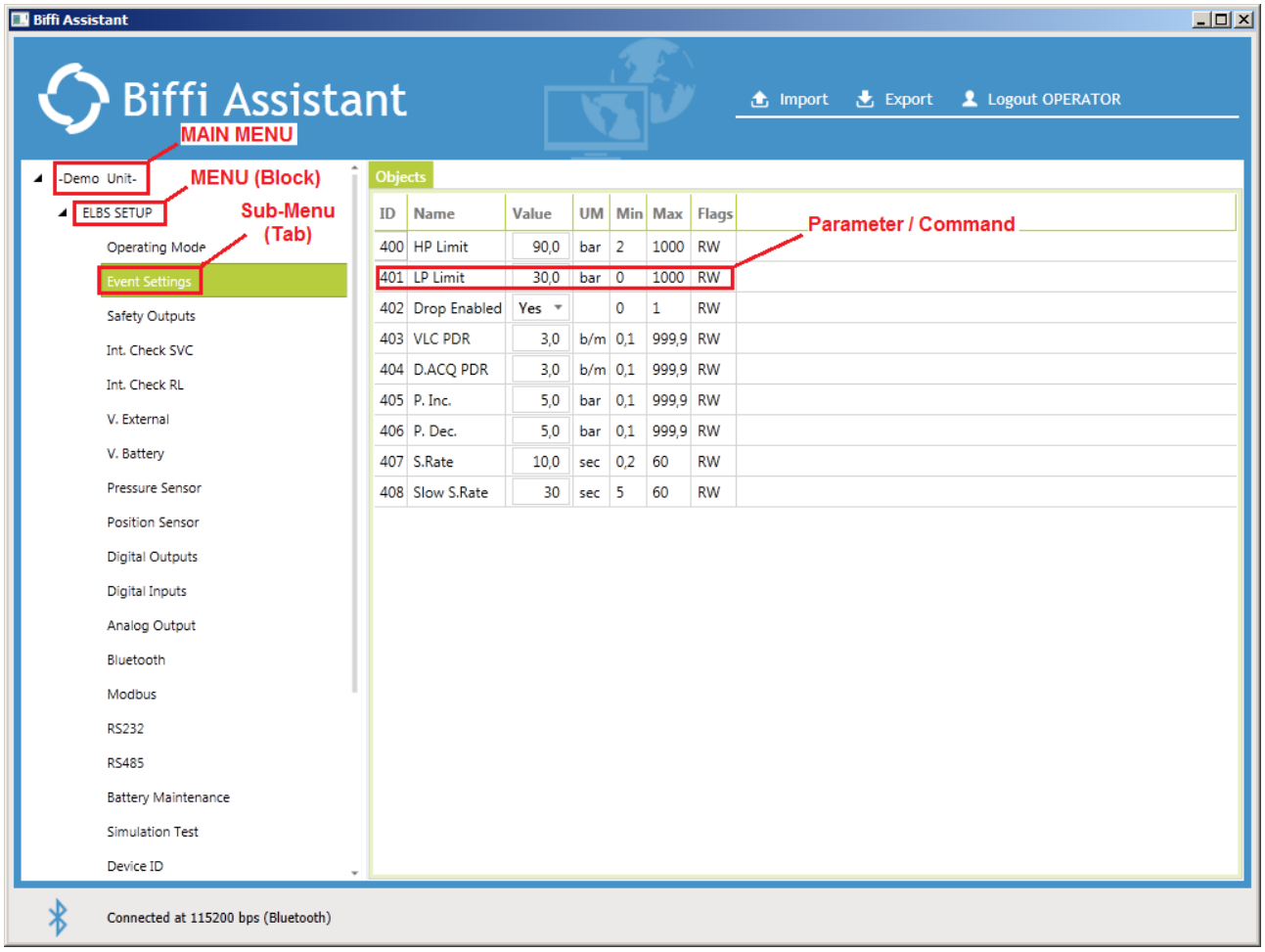


4.1.3 Biffi Assistant's Structure

The Biffi Assistant structure is organized as follows:

- MAIN MENU
  - MENU 1
  - …
  - …
  - MENU #N
    - Sub-Menu N_1
    - …
    - ….
    - Sub-Menu N_x
      - Parameter / Command N_x_1
      - …
      - …
      - Parameter / Command N_x_y

The MAIN MENU can contain several MENUs (Blocks).
Each MENU (block) can contain several Sub-Menus (Tabs).
Each Sub-Menu (Tab) can contain several Parameters / Commands.
For each parameter are defined: Name, Value, UM (Unit Measure), Min (Minimum value), Max (Maximum value) and the Flags (R, R/W).



See 6 and [1] for details about the parameters.
See paragraph from 4.2 to 4.5 for reading/writing parameters and launching commands.

4.2 Read/Update parameters

During the connection process (see 3.2) the value of the parameters is not updated.

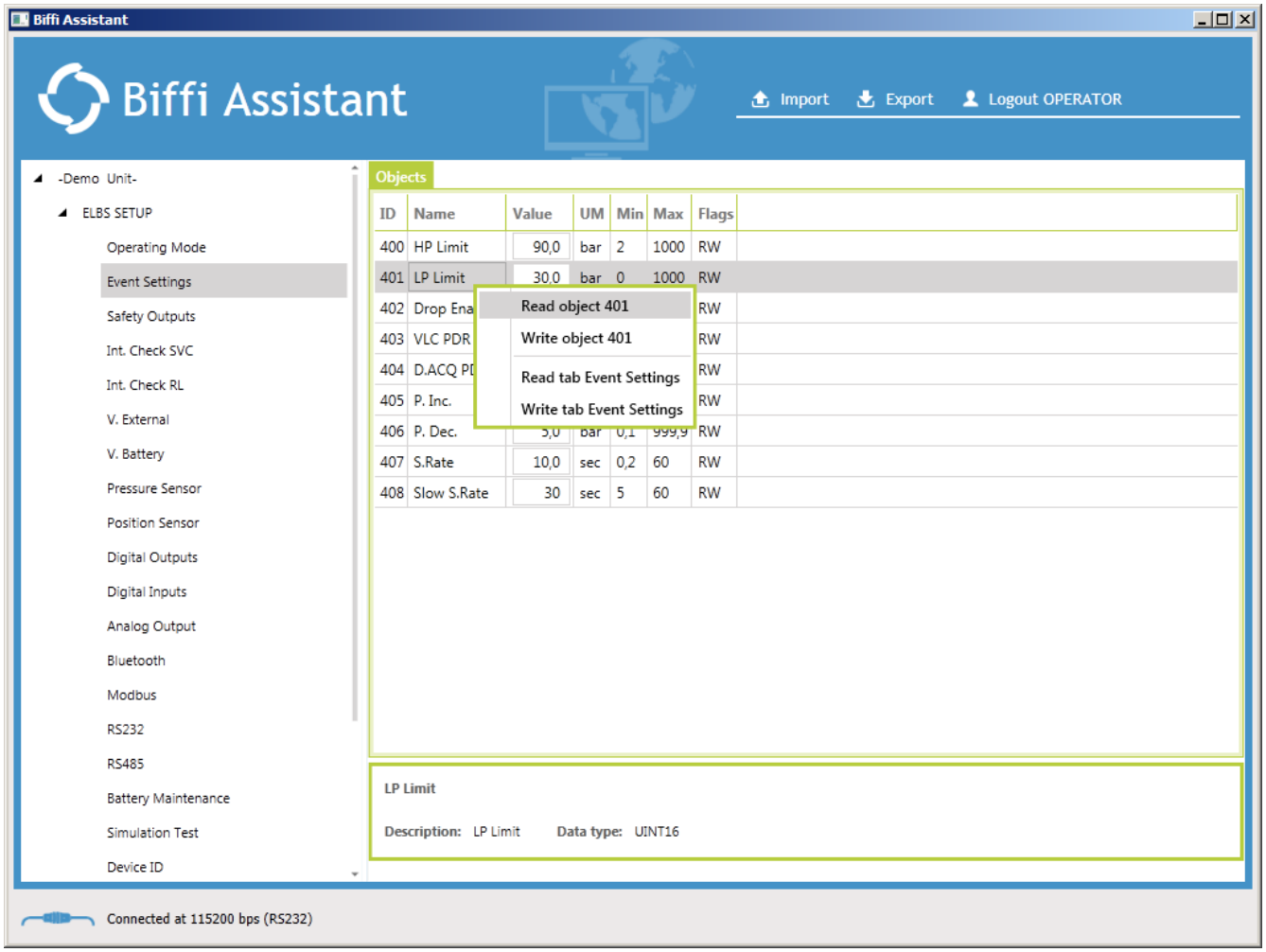
The parameters of a single Sub-Menu (Tab) are automatically updated at first access to the Sub-Menu (Tab); for the further accesses, the updating of the parameters must be done manually.
It is possible to manually update all the parameters of a Sub-Menu (Tab) simultaneously (see 4.2.2), to update them individually (see 4.2.1), to update all the parameters of a Menu (Block) (see 4.2.3) or to update all the parameters of the device at the same time (see 4.2.4).

The readable parameters are the ones classified as “RW” or “R” into the “Flags” field that are not commands (see 6).

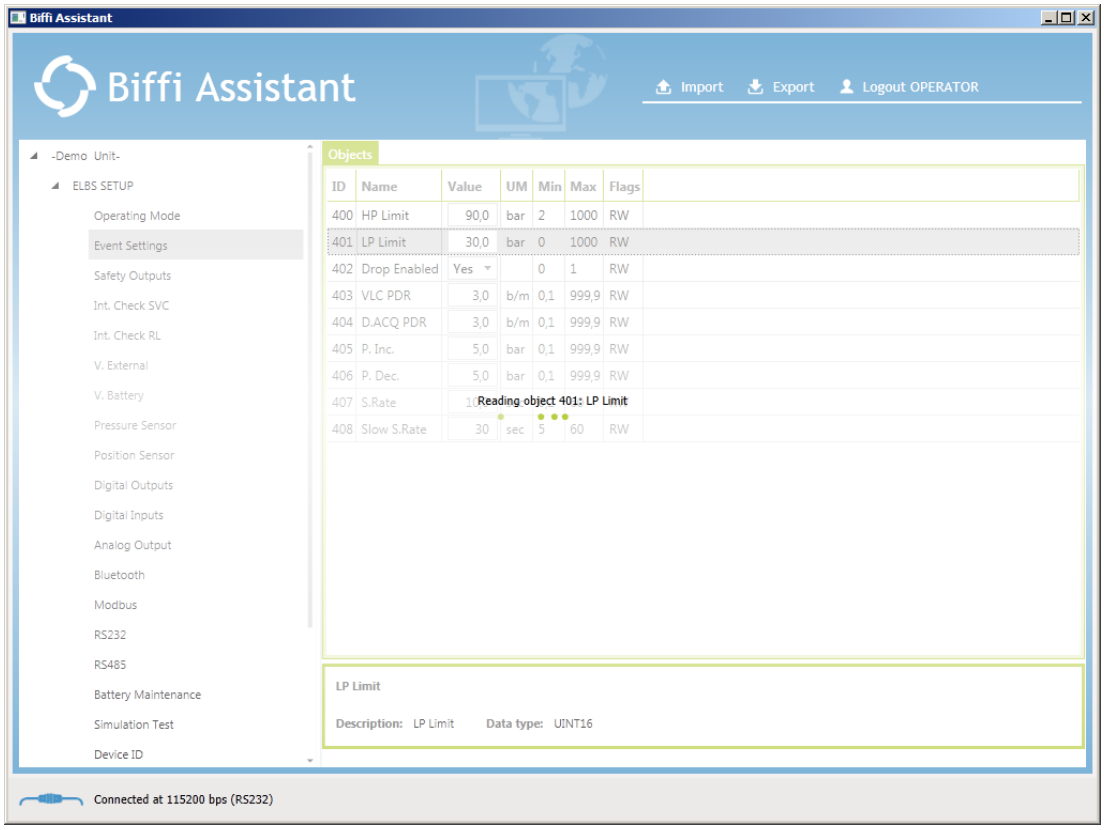
For reading the value of the parameters of the “Measures” Menu see 4.2.5.
For launching a command see 4.4.

4.2.1 Read/Update a single parameter

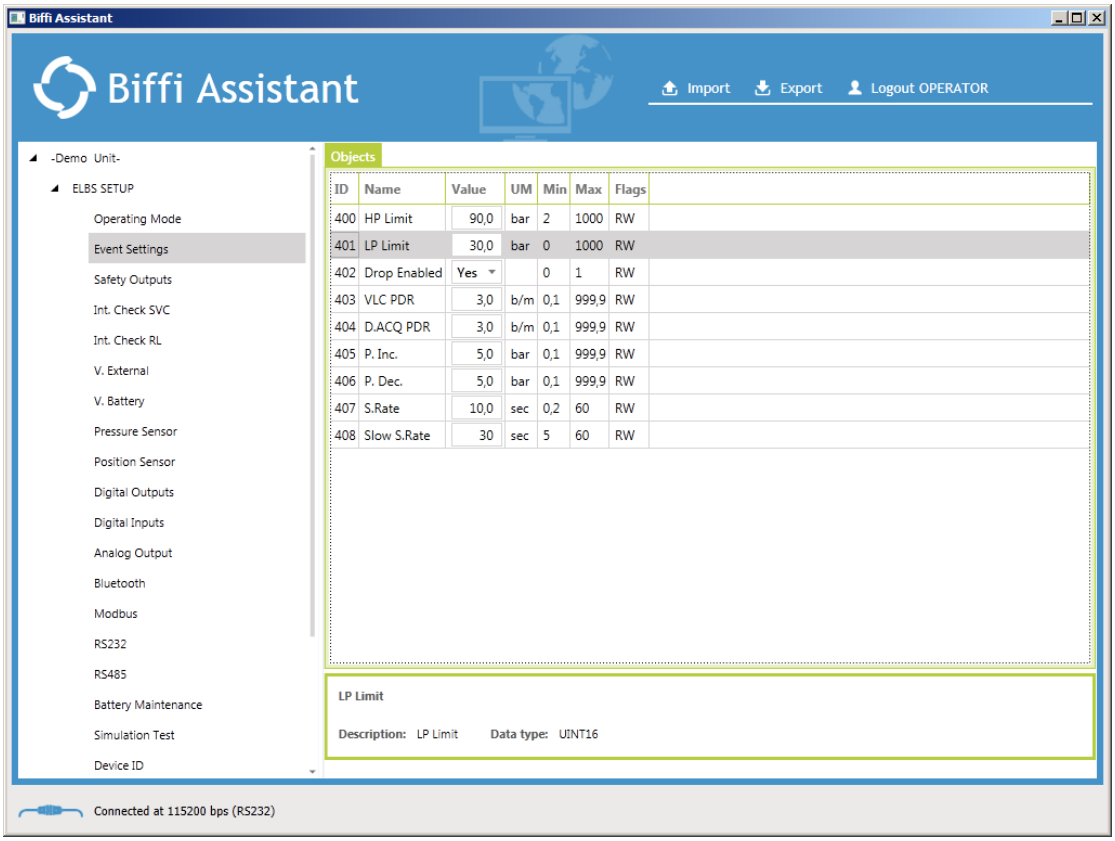
Right-click of the mouse on the row of the parameter that must be updated and then left-click of the mouse on “Read Object *object ID*”.



The updating of the parameter starts.



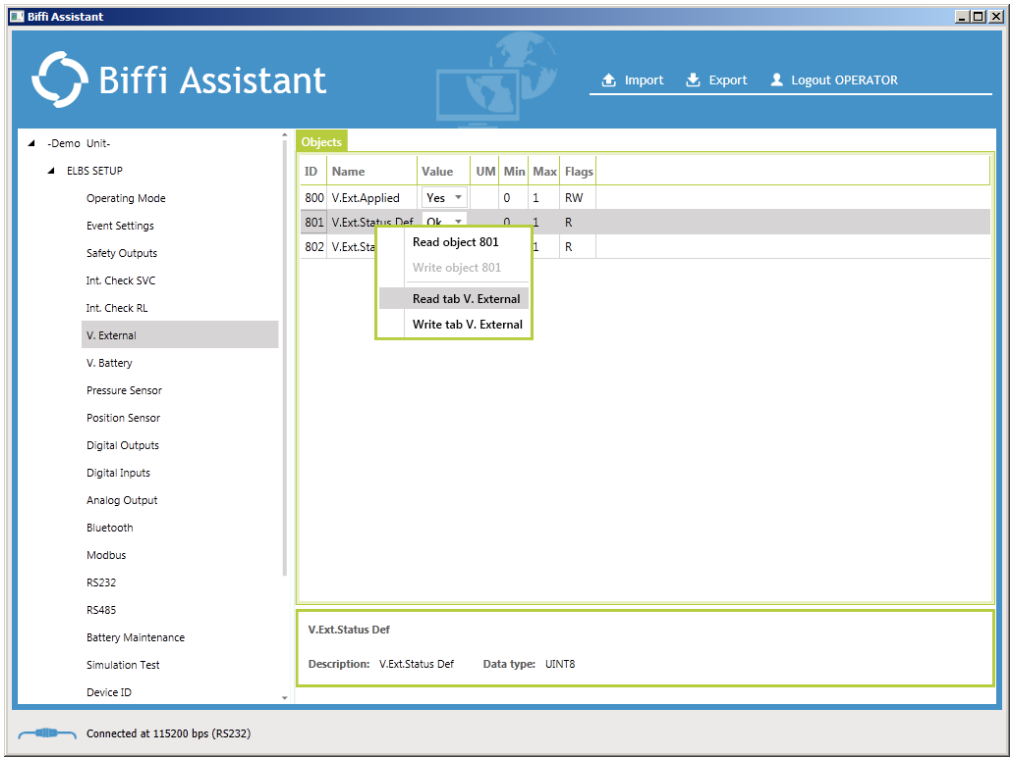
Wait Until the updating process stops.



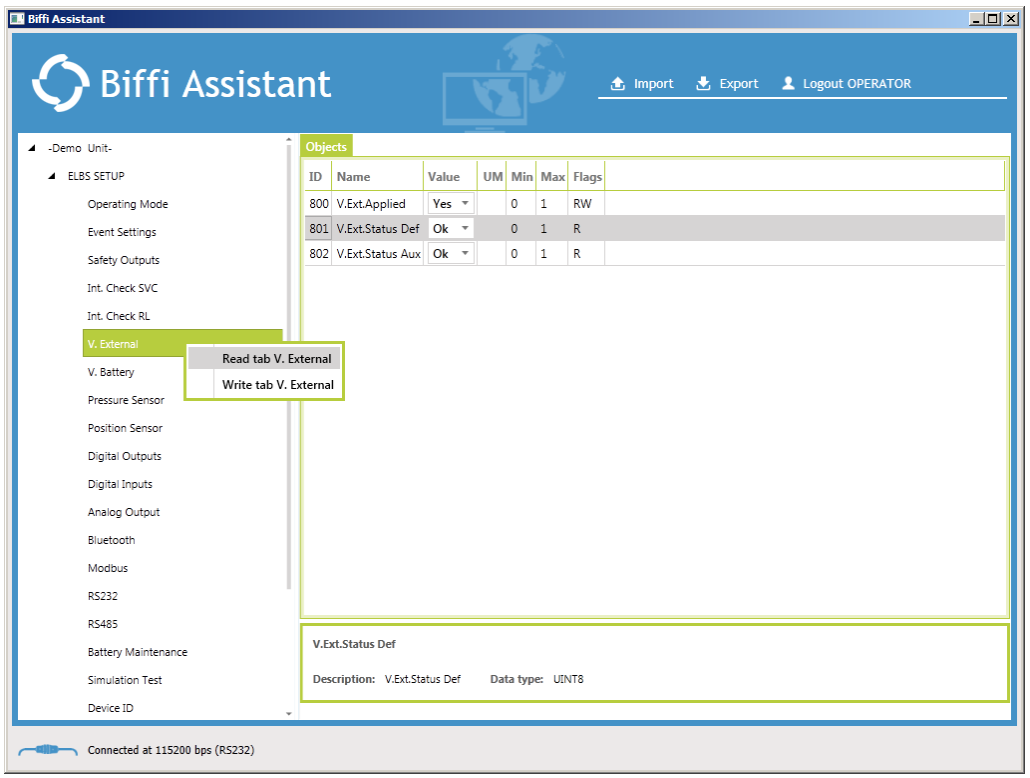
4.2.2 Read/Update all the parameters of a single Sub-menu (Tab)

There are two ways for reading/updating all the parameters of a single tab:

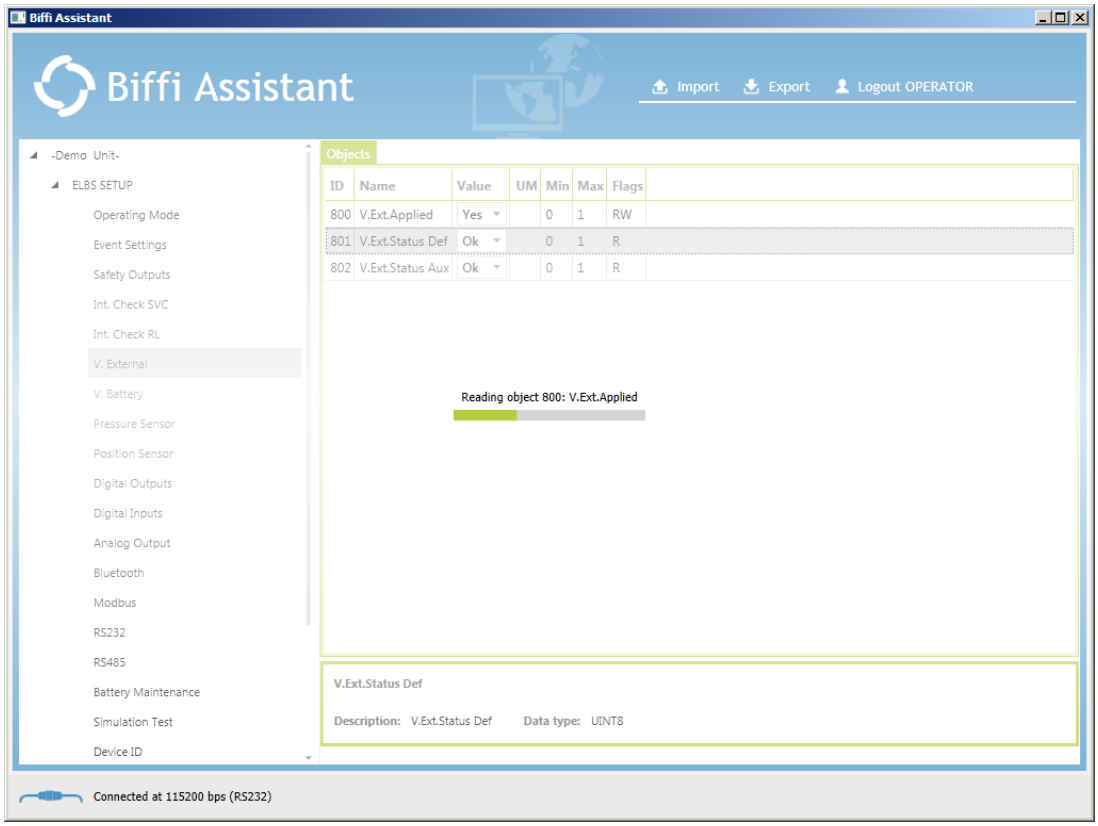
1. Right-click of the mouse on the row of any parameter of the Sub-Menu (Tab) that must be updated and then left-click of the mouse on “Read tab *Tab Name*”.



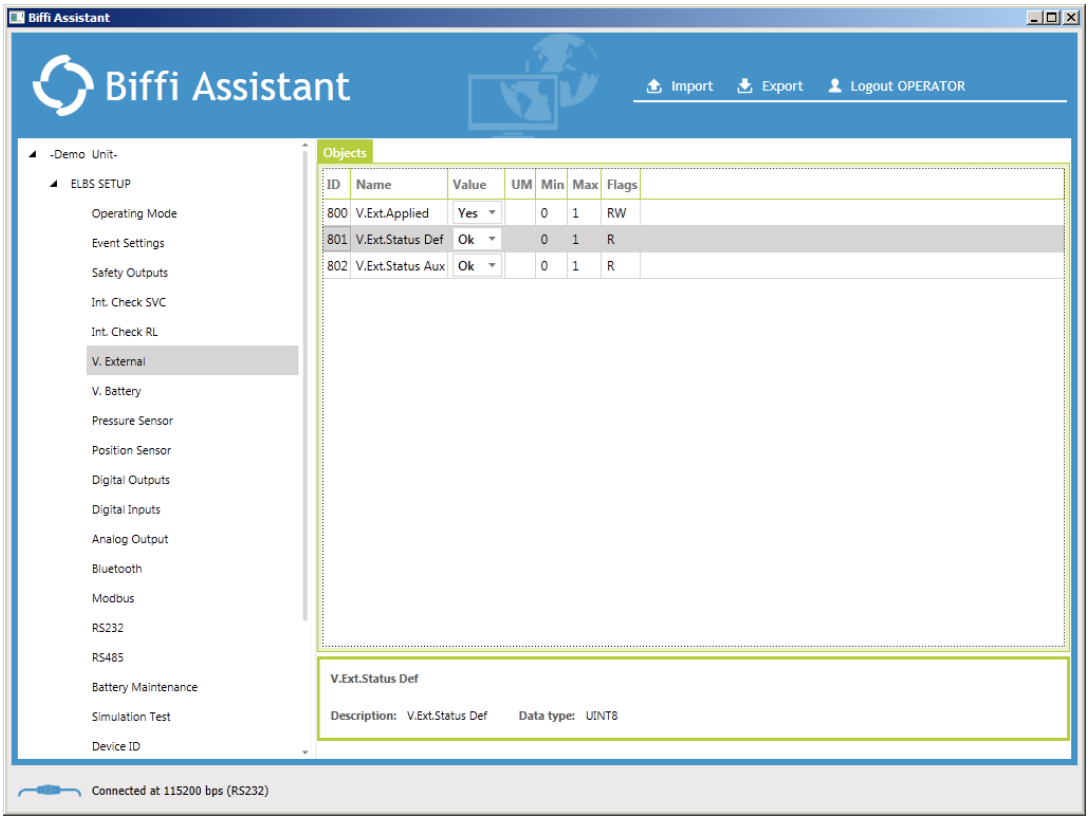
2. Right-click of the mouse on the name of the Sub-Menu (Tab) that must be updated and then left-click of the mouse on “Read tab *Tab Name*”.



The updating of the parameter starts.

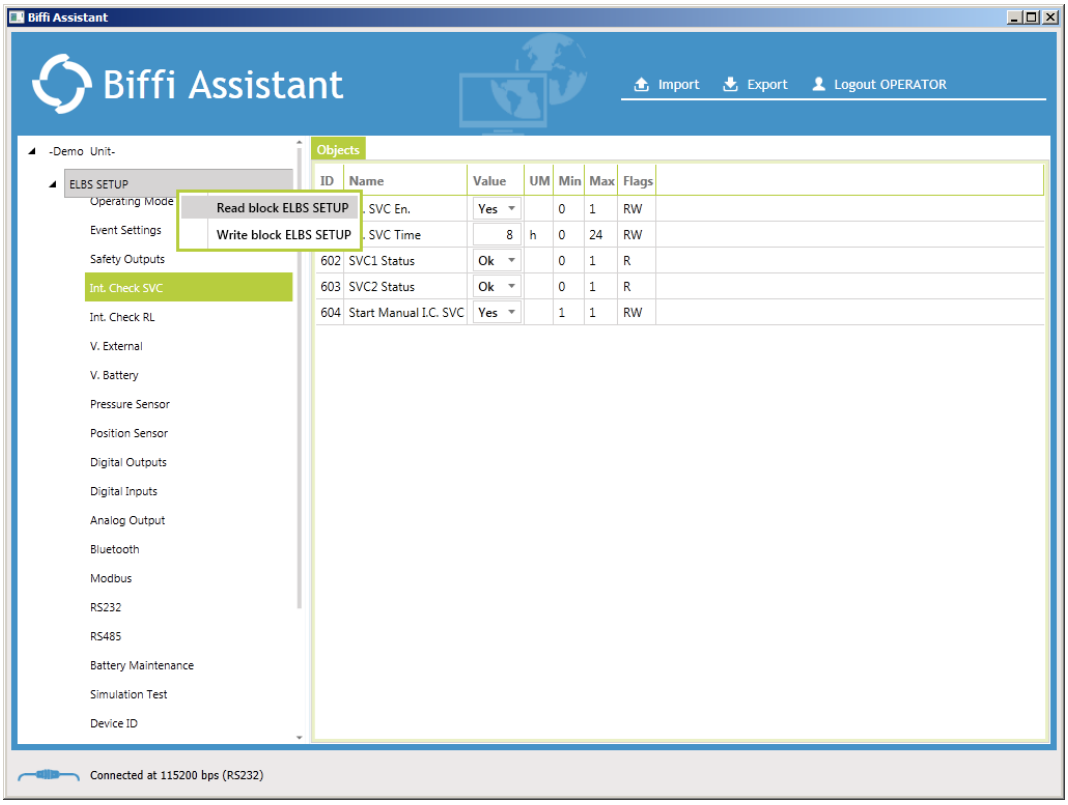


Wait Until the updating process stops.

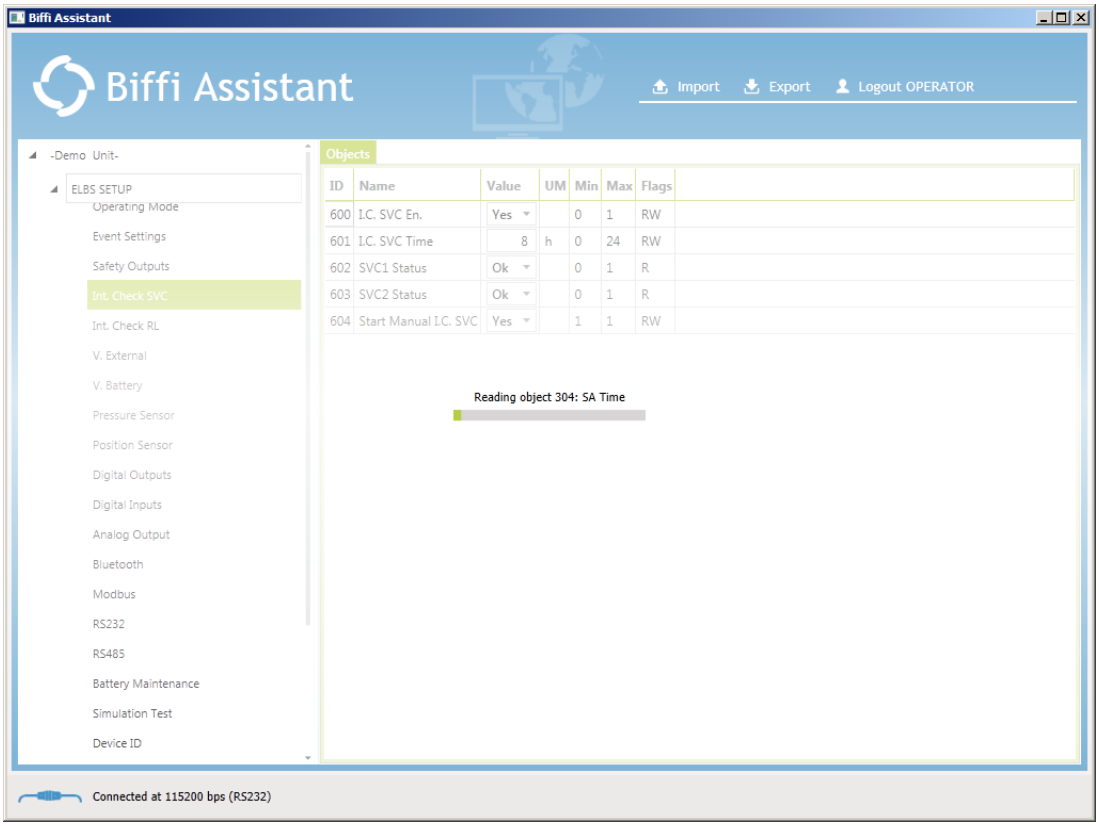


4.2.3 Read/Update all the parameters of single Menu (Block)

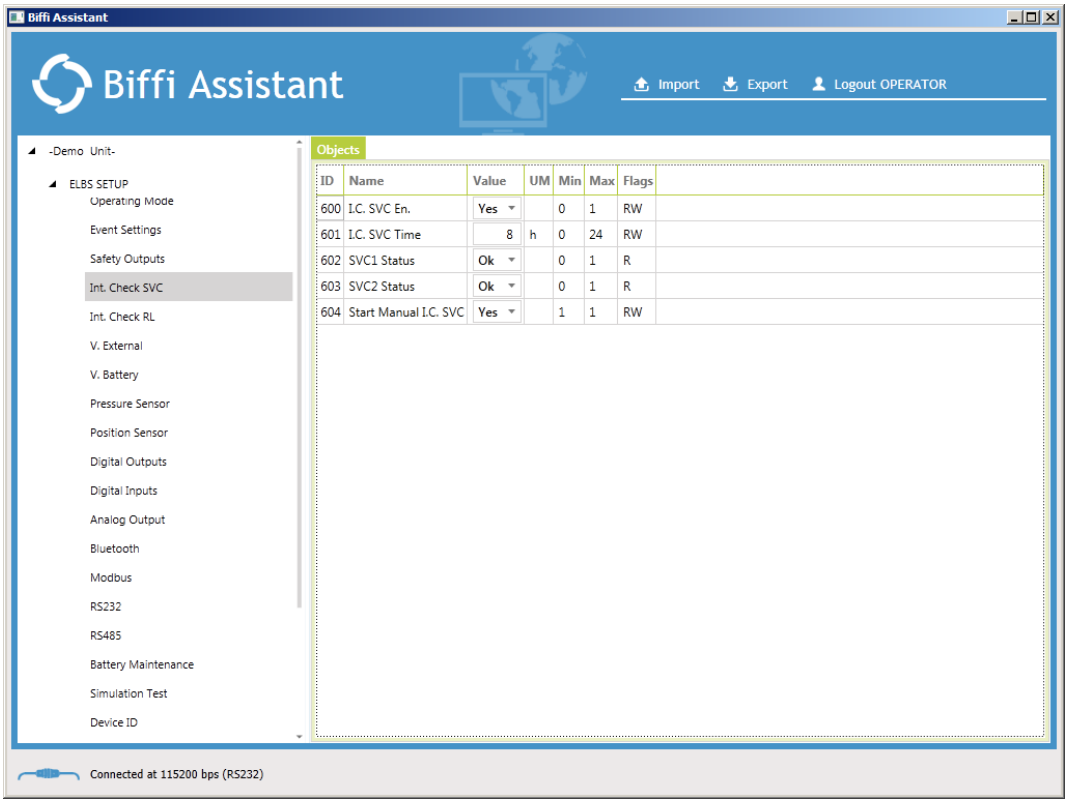
Right-click of the mouse on the name of the Menu (Block) that must be updated and then left-click of the mouse on “Read block *Block Name*”.



The updating of the parameter starts.

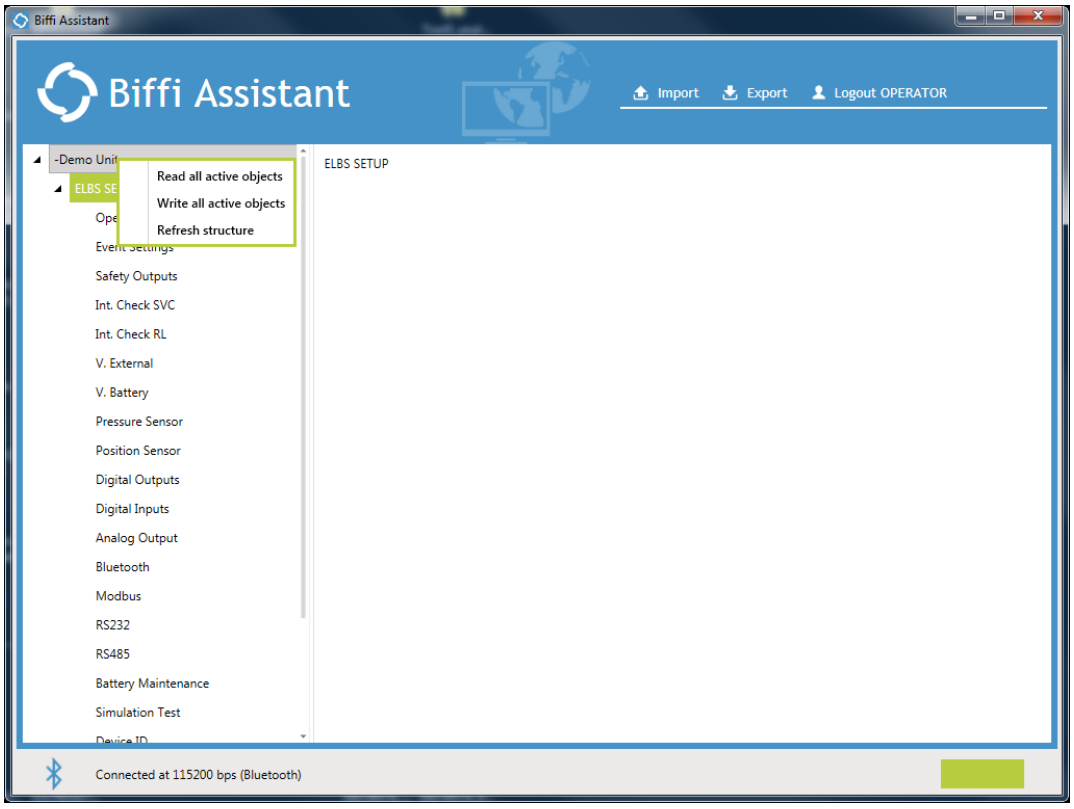


Wait Until the updating process stops.

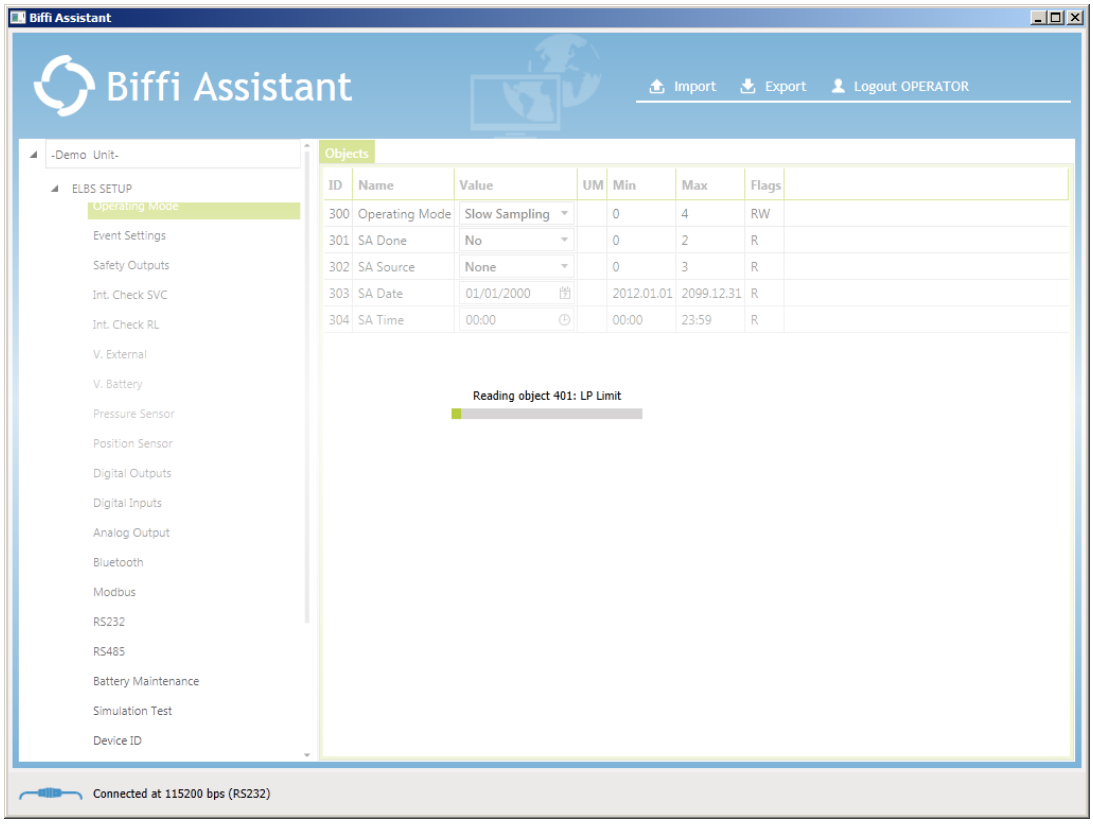


4.2.4 Read/Update all the parameters of the Device.

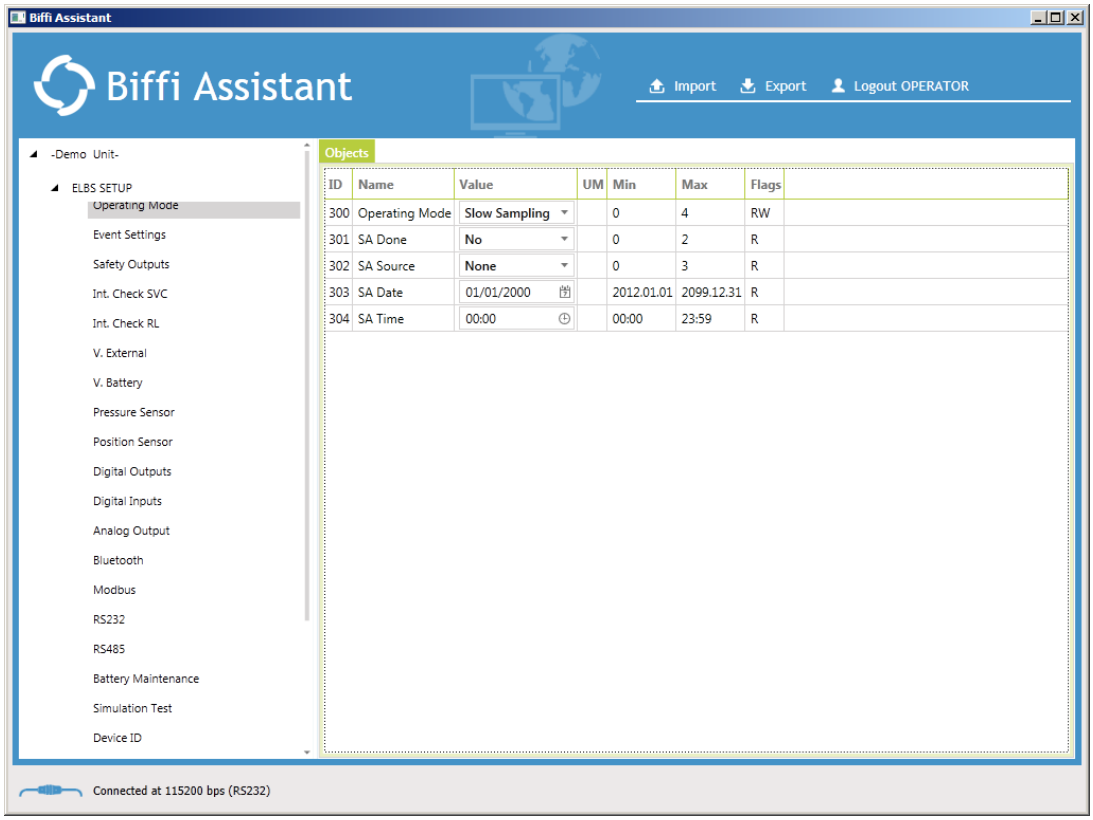
Right-click of the mouse on the name of the Main Menu then left-click of the mouse on “Read all active objects”.



The updating of the parameter starts.

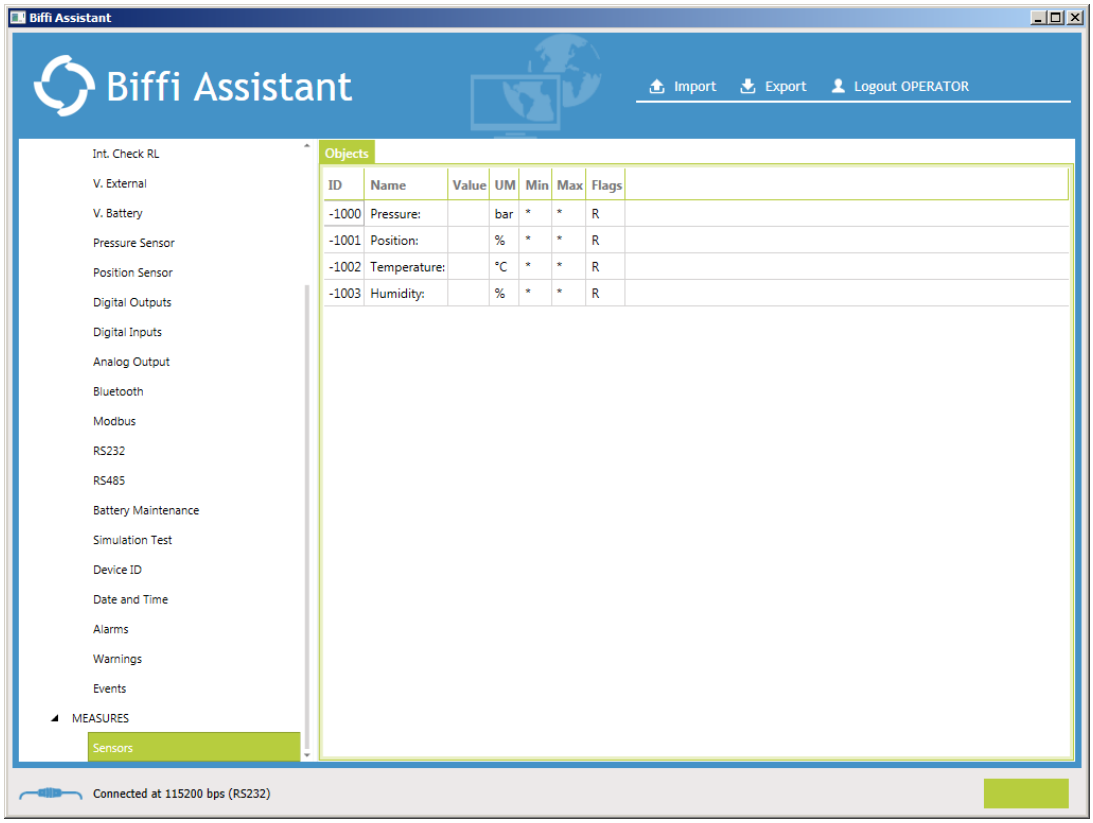


Wait Until the updating process stops.

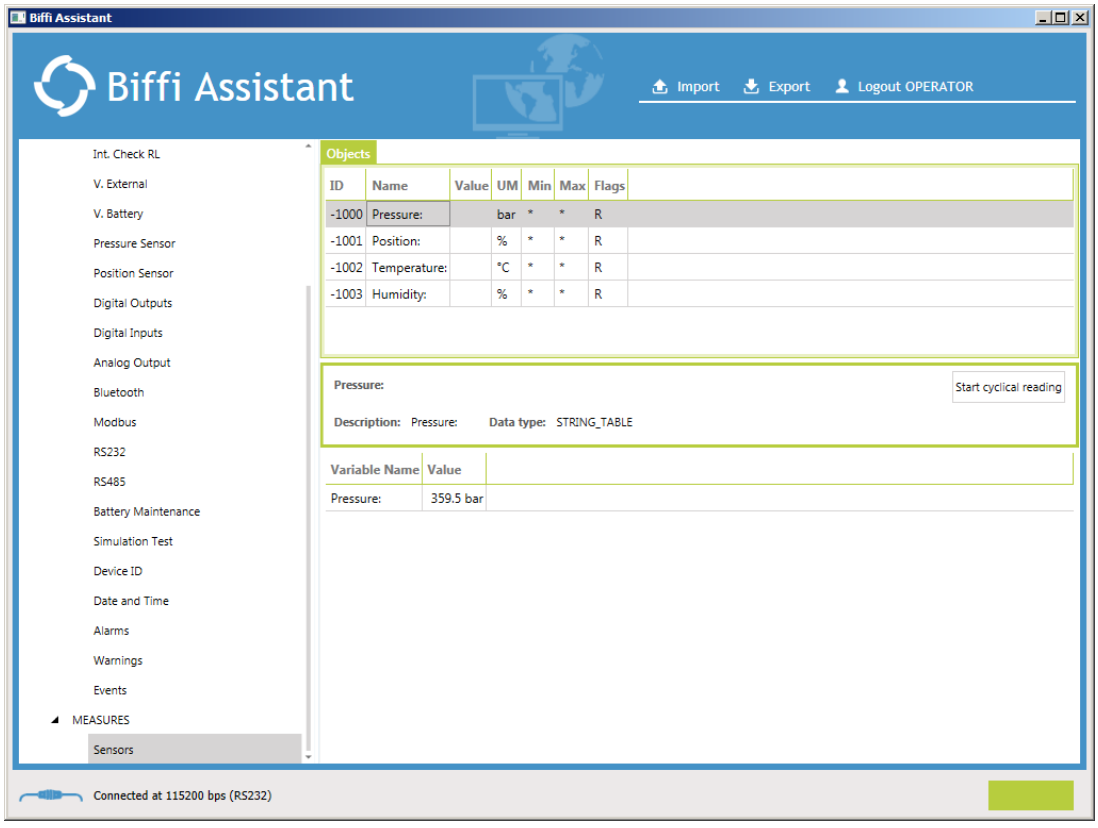


4.2.5 Read Measures Menu

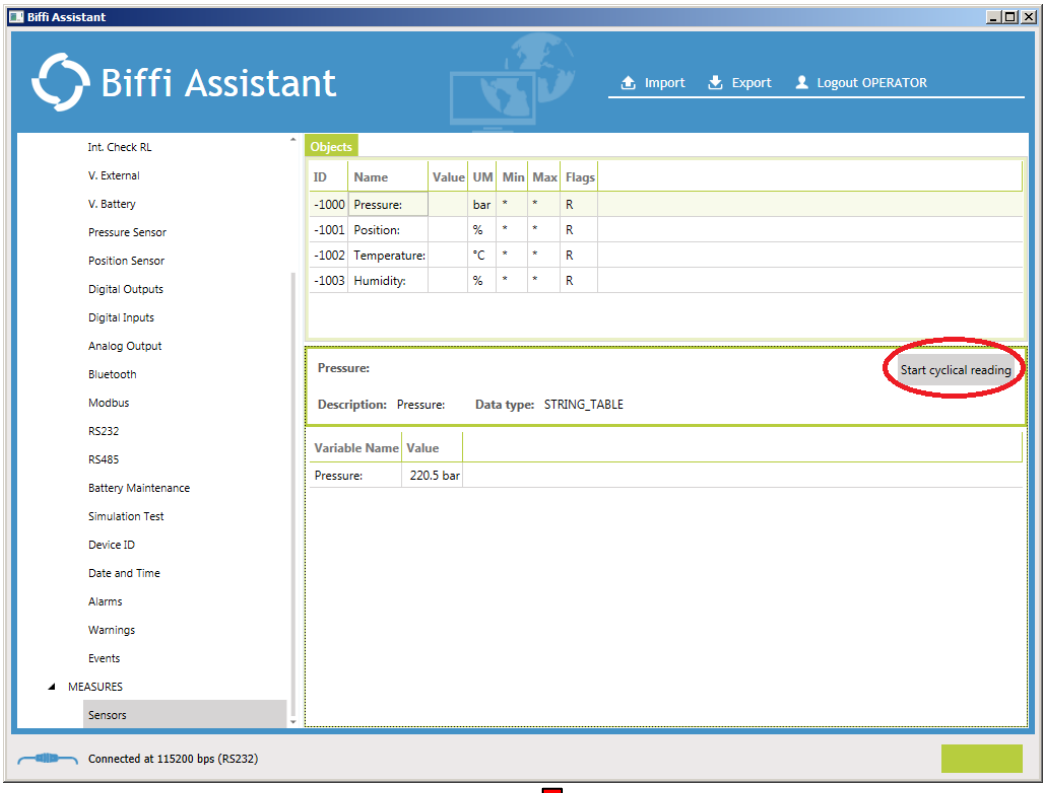
Open the “Measures” Menu (Block) and select the “Sensors” Sub-Menu (Tab).

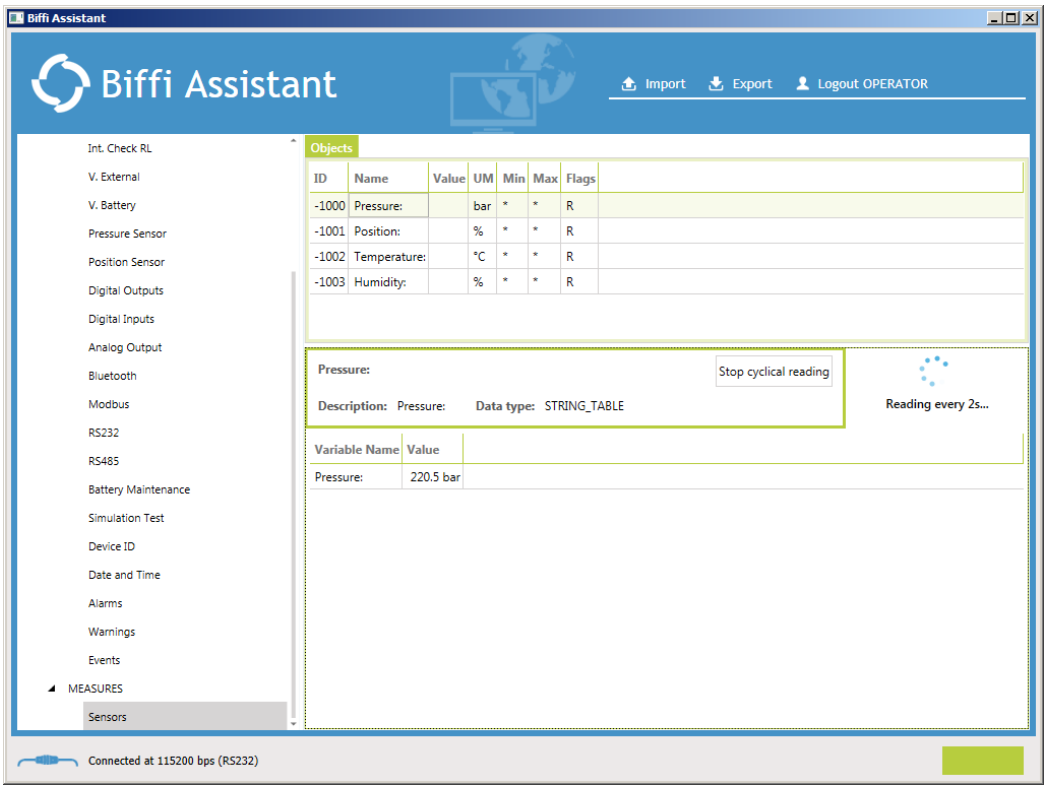


Left-click of the mouse on the row of the parameter to be read (“Pressure” in the screen below).



Left-click of the mouse on “Start cyclical reading”, for reading/updating the value of the parameter every two seconds.





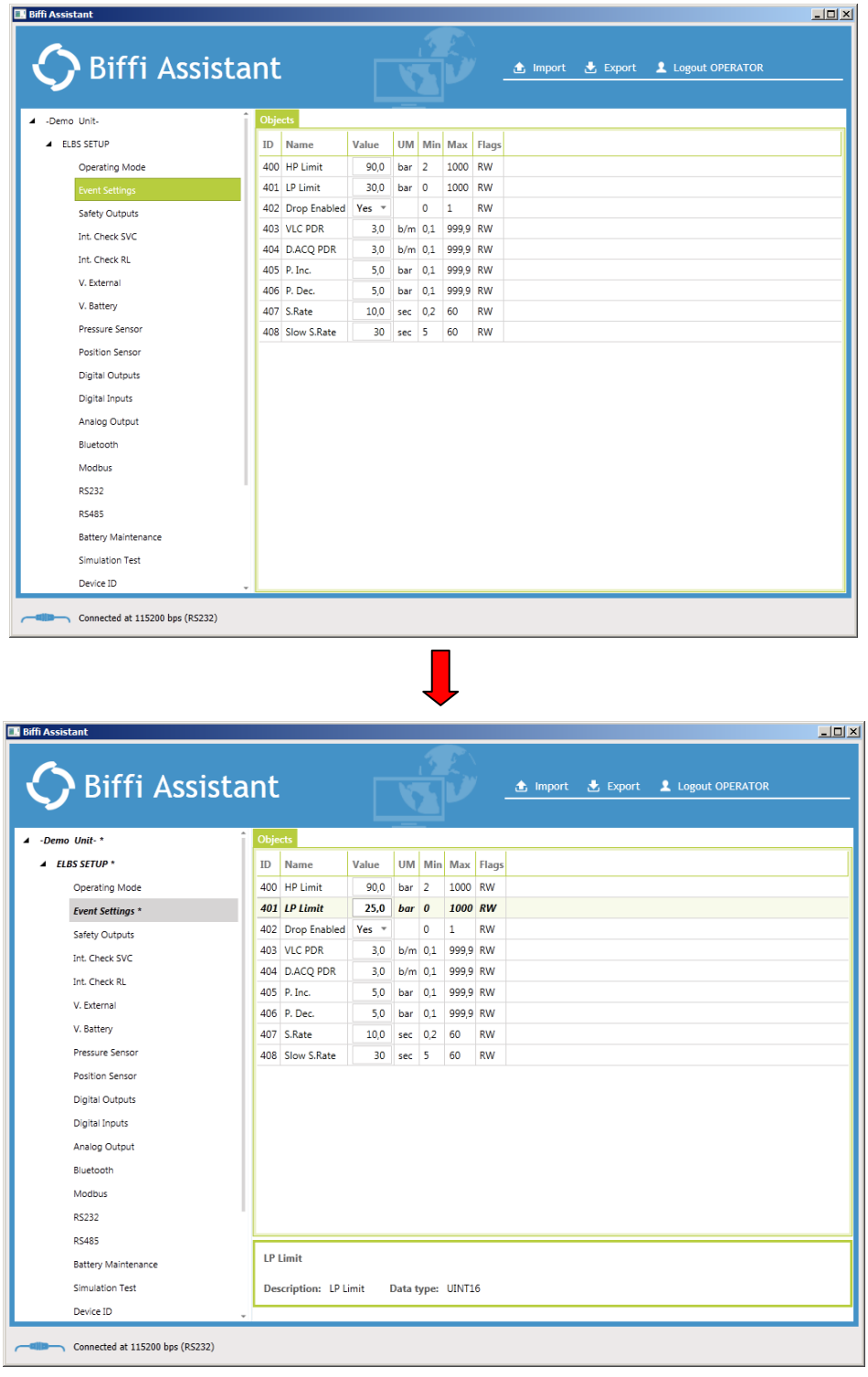
Left-click of the mouse on “Stop cyclical reading” for stopping the cyclical reading. The cyclical reading is automatically stopped by selecting another parameter or by exiting from the Sub-Menu (Tab).

4.3 Write Parameters

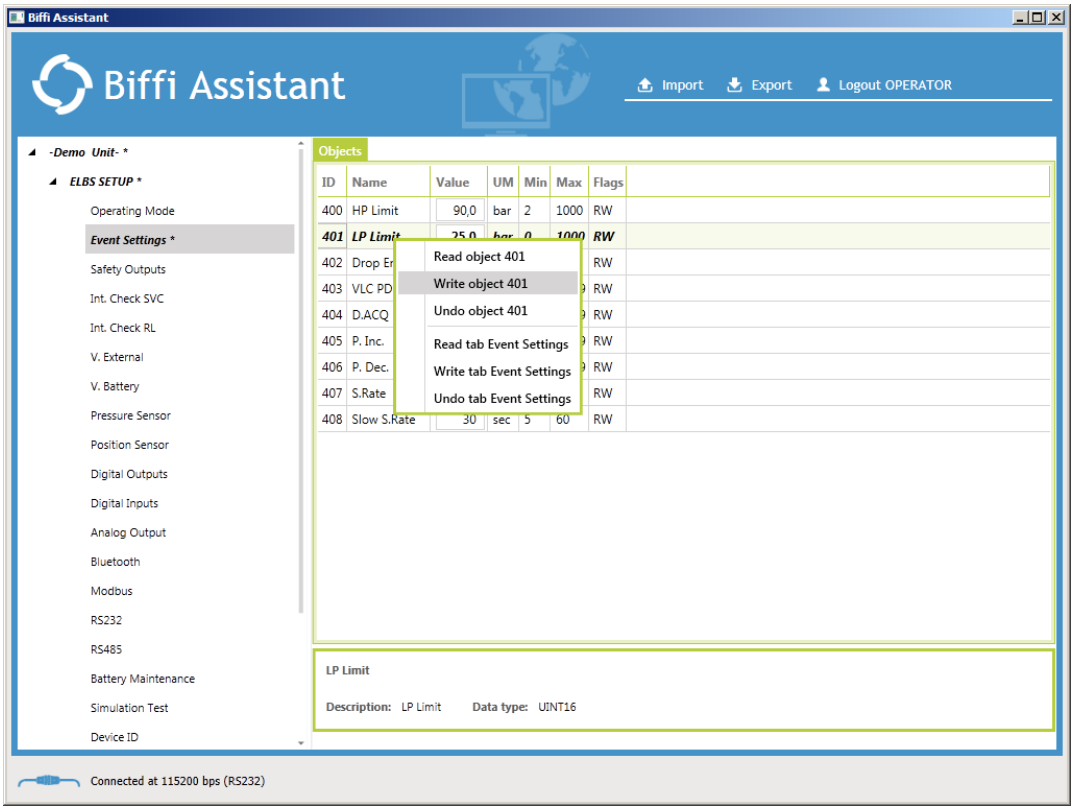
The Biffi Assistant allows writing all the parameters of a Sub-Menu (Tab) simultaneously (see 4.3.2), writing them individually (see 4.3.1), writing all the parameters of a Menu (Block) (see 4.3.3) or writing all the parameters of the device at the same time (see 4.3.4).
The writable parameters are the ones classified as “RW” into the “Flags” field that are not commands (see 6).

4.3.1 Write a single parameter

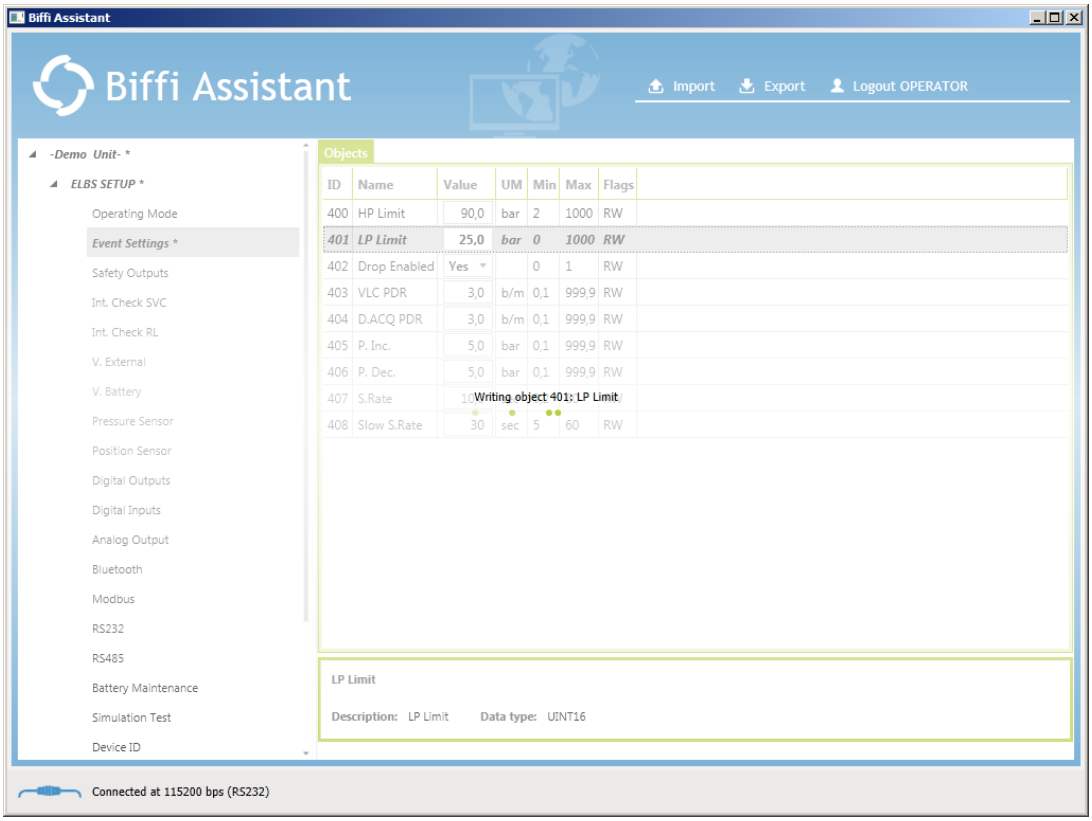
Select, through the mouse, the “Value” field of the parameter that must be written and type the new value or select the new value from the available list (it depends on the type of parameter).



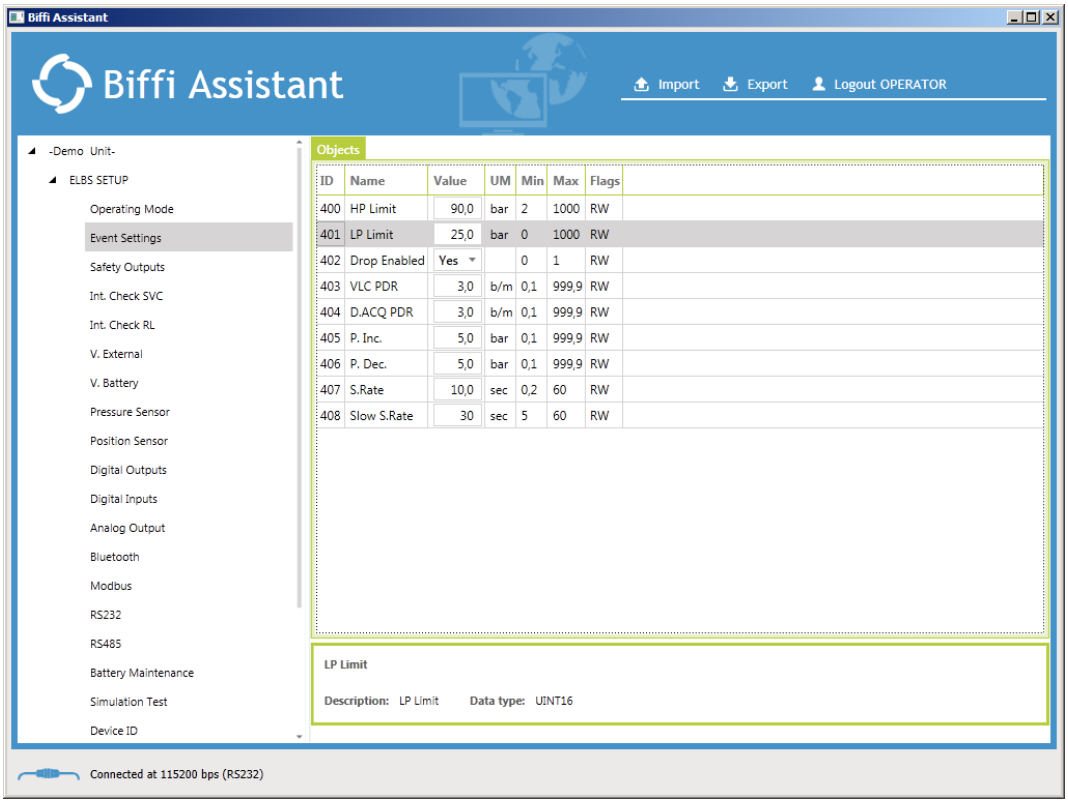
Right-click of the mouse on the row of the parameter that must be updated and then left-click of the mouse on “Write Object *object ID*” and confirm the writing operation (a confirmation window appears).
Left-click of the mouse on “Undo object *object ID*” to cancel the writing operation.



The writing process starts.



Wait Until the writing process stops.

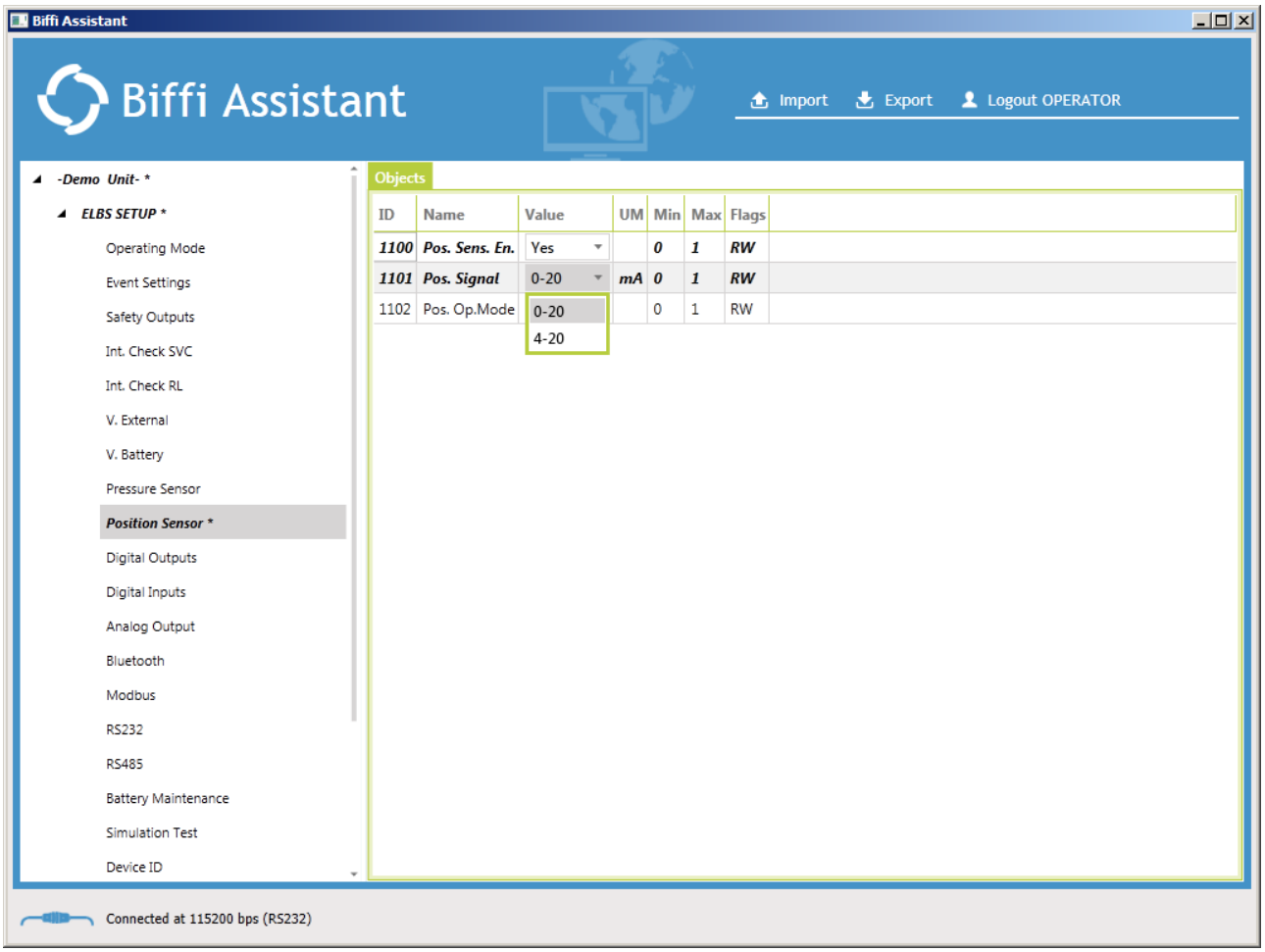


4.3.2 Write all the parameters of a single Sub-Menu (Tab)

Warning:

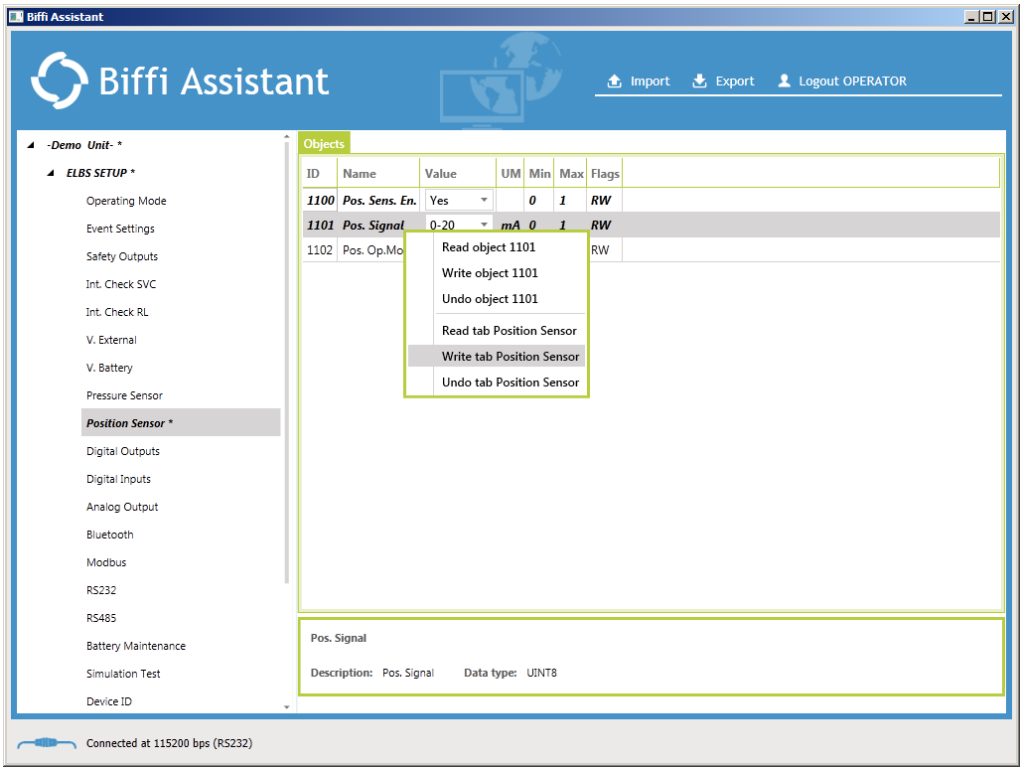
During the connection process (see 3.2) the value of the parameters is not updated.
Before performing the writing of all the parameters of a Sub-Menu (Tab) it is necessary to verify that all the parameters of the Tab have the correct value.
Before performing the writing command, it is suggested to update the value of all the parameters of the Tab (see 4.2.2) or to import a valid file (see 5).

Select, through the mouse, the “Value” field of the parameters that must be written and type the new values or select the new values from the available list (it depends on the type of parameter).

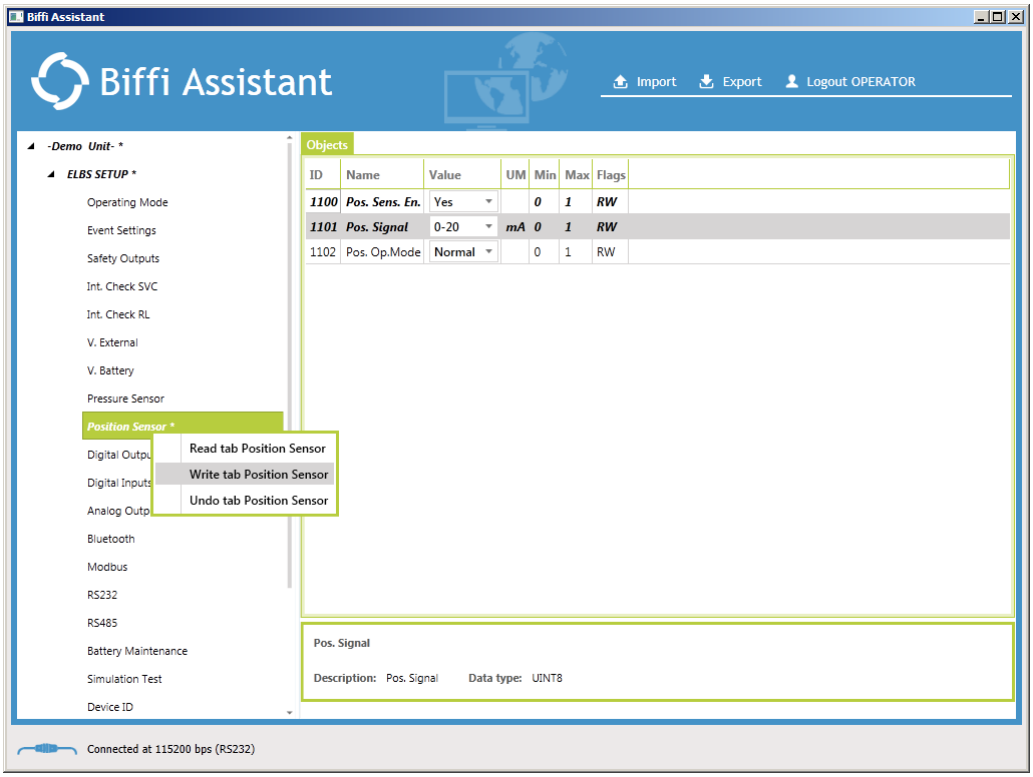


There are two ways for writing all the parameters of a single tab:

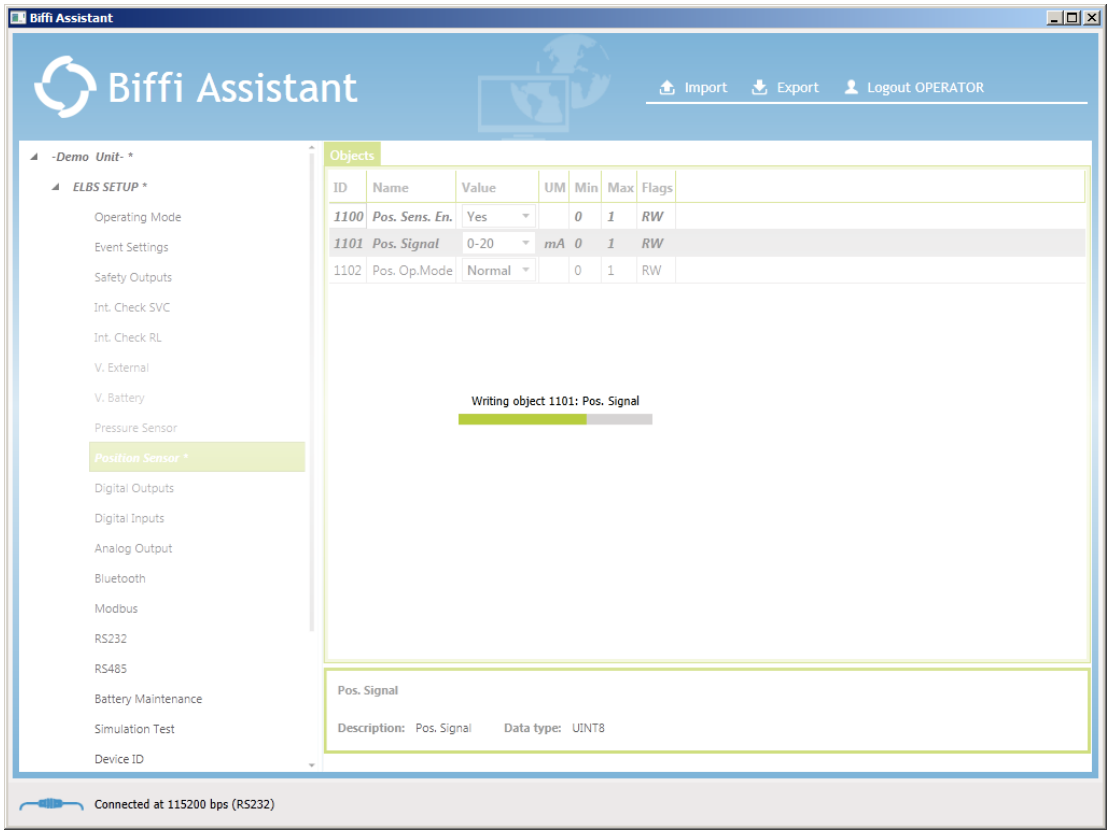
1. Right-click of the mouse on the row of any parameter of the Sub-Menu (Tab) that must be written and then left-click of the mouse on “Write tab *Tab Name*” and confirm the writing operation (a confirmation window appears). Left-click of the mouse on “Undo object *Tab Name*” to cancel the writing operation.



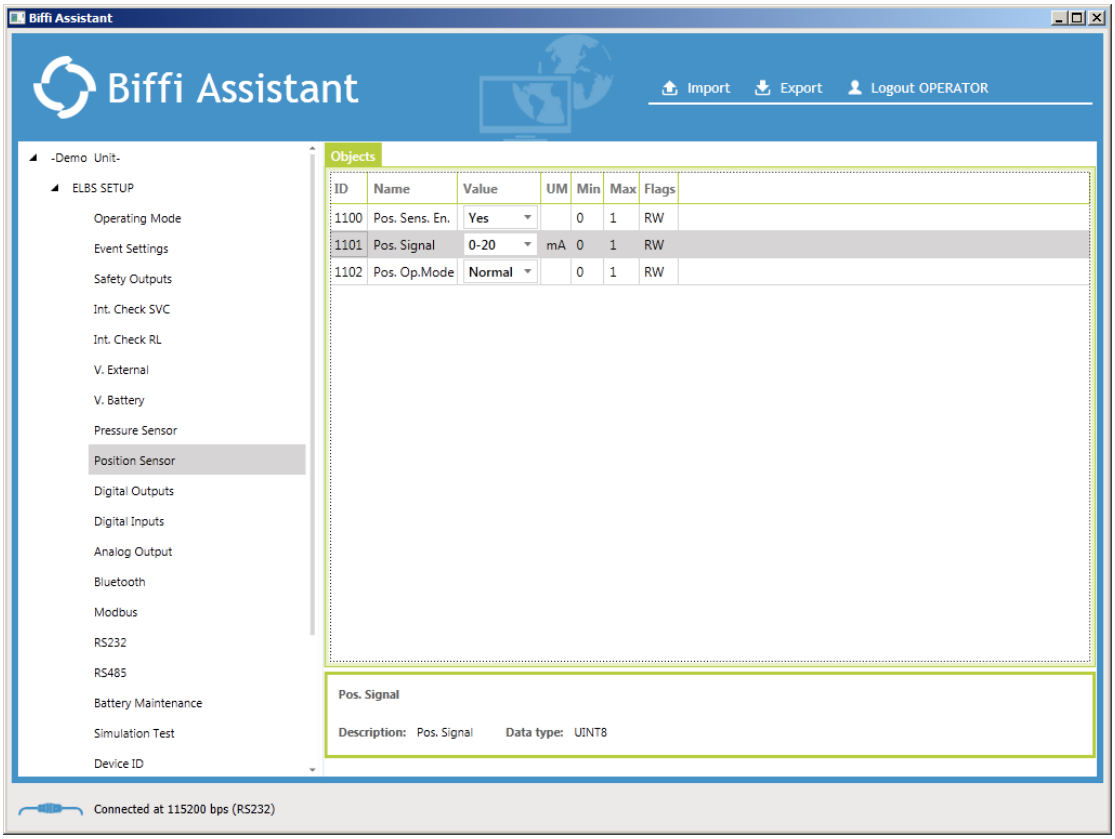
2. Right-click of the mouse on the name of the Sub-Menu (Tab) that must be written and then left-click of the mouse on “Write tab *Tab Name*” and confirm the writing operation (a confirmation window appears). Left-click of the mouse on “Undo tab *Tab Name*” to cancel the writing operation.



The writing of the parameters starts.



Wait until the updating process stops.

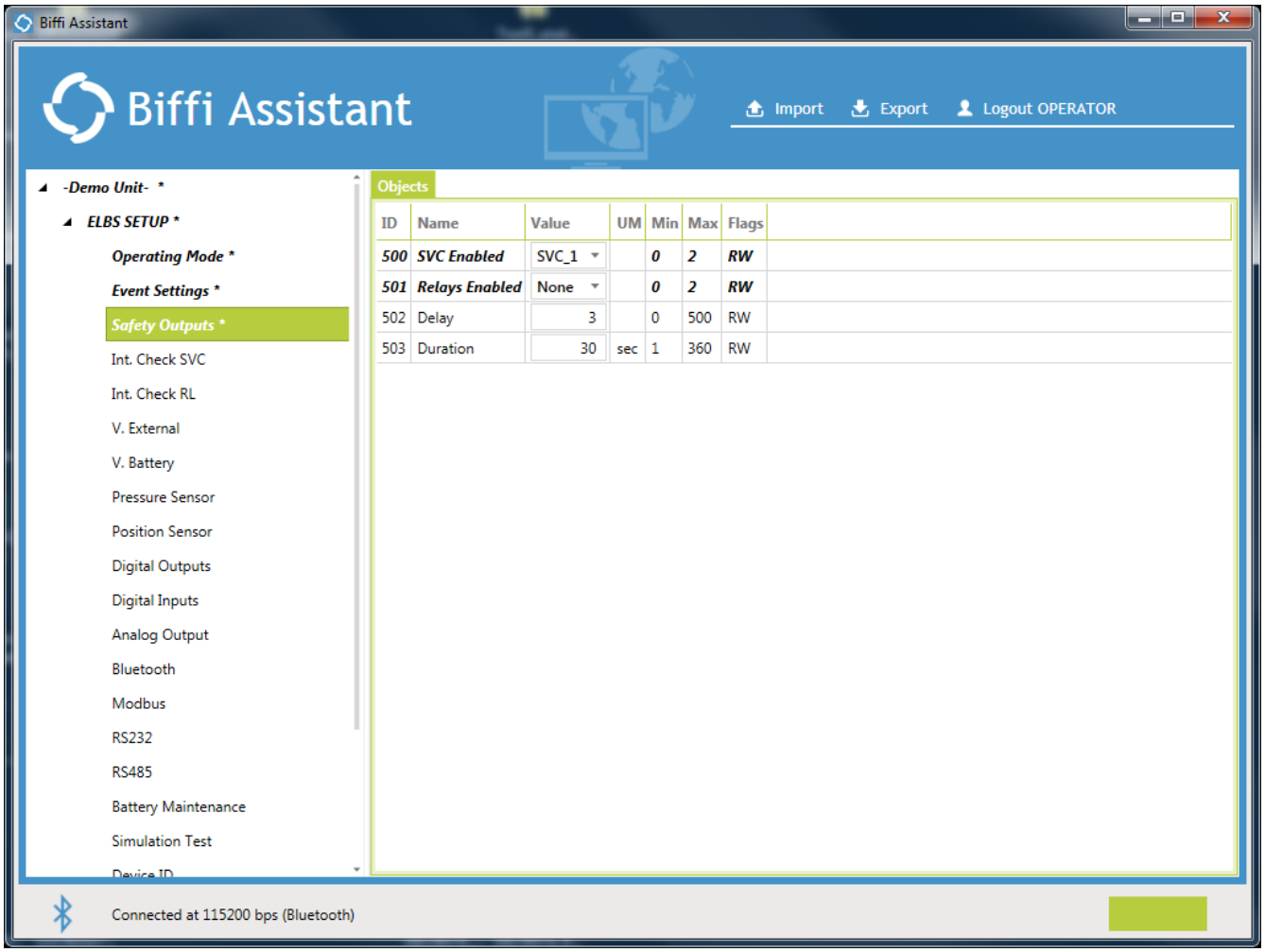


4.3.3 Write all the parameters of a single Menu (Block)

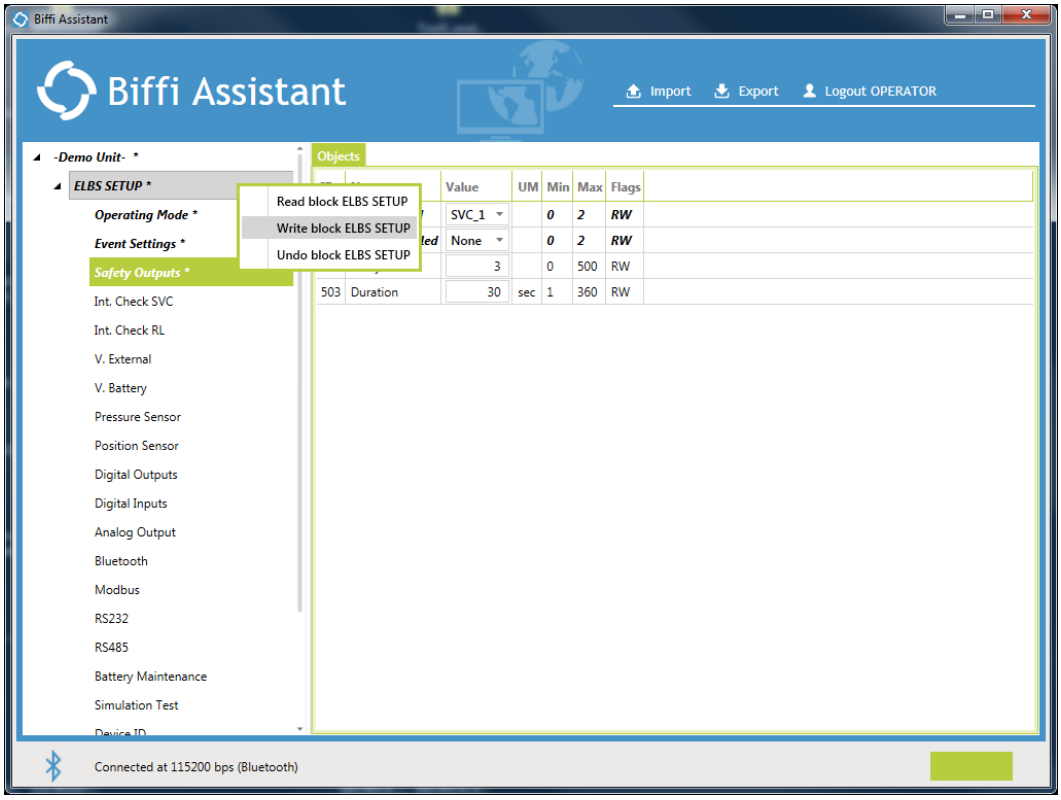
Warning:

During the connection process (see 3.2) the value of the parameters is not updated.
Before performing the writing of all the parameters of a Menu (Block) it is necessary to verify that all the parameters of the Block have the correct value.
Before performing the writing command, it is suggested to update the value of all the parameters of the Block (see 4.2.3) or to import a valid file (see 5).

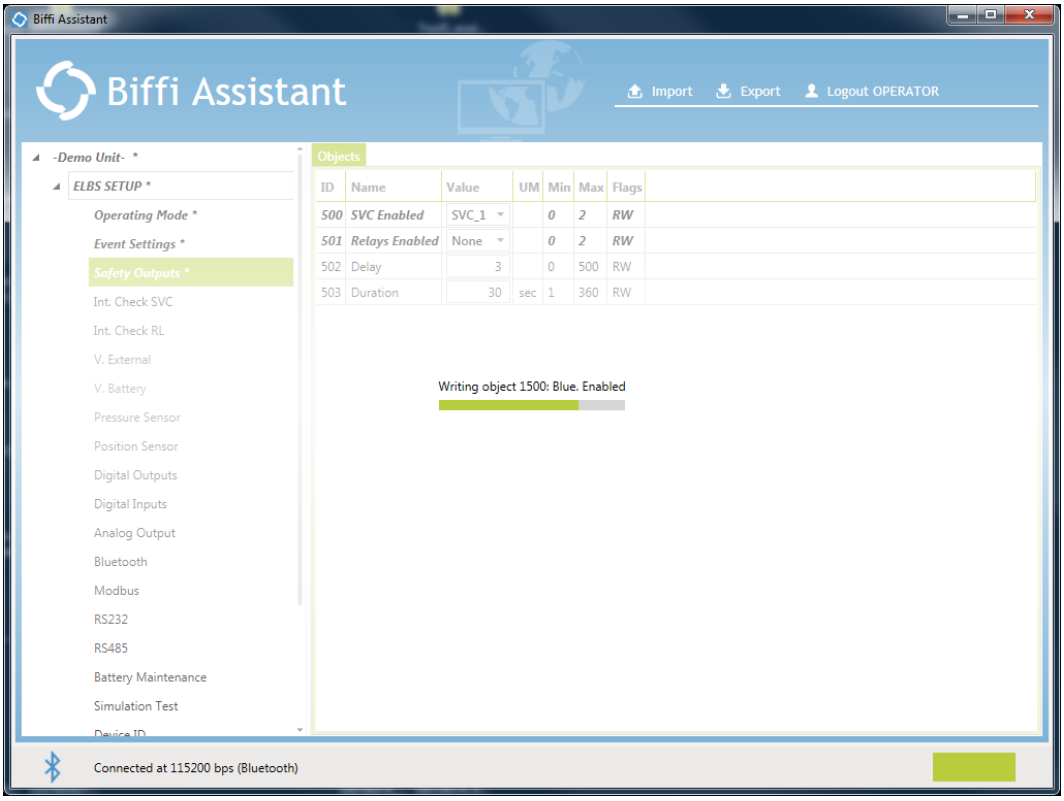
Select, through the mouse, the “Value” field of the parameters that must be written and type the new values or select the new values from the available list (it depends on the type of parameter).



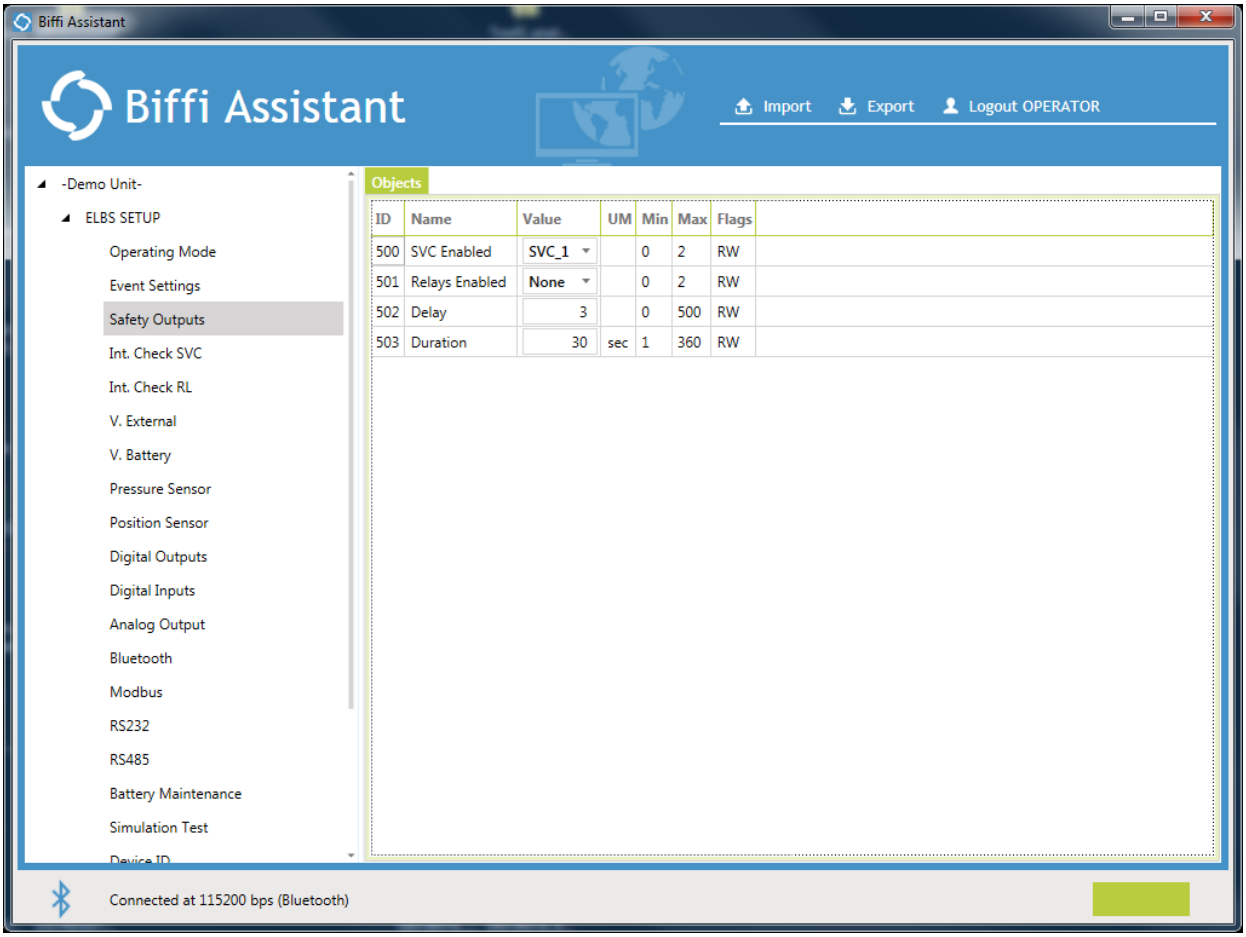
Right-click of the mouse on the name of the Menu (Block) that must be updated and then left-click of the mouse on “Write block *Block Name*” and confirm the writing operation (a confirmation window appears).
Left-click of the mouse on “Undo block *Block Name*” to cancel the writing operation.



The writing of the parameters starts.



Wait Until the writing process stops.

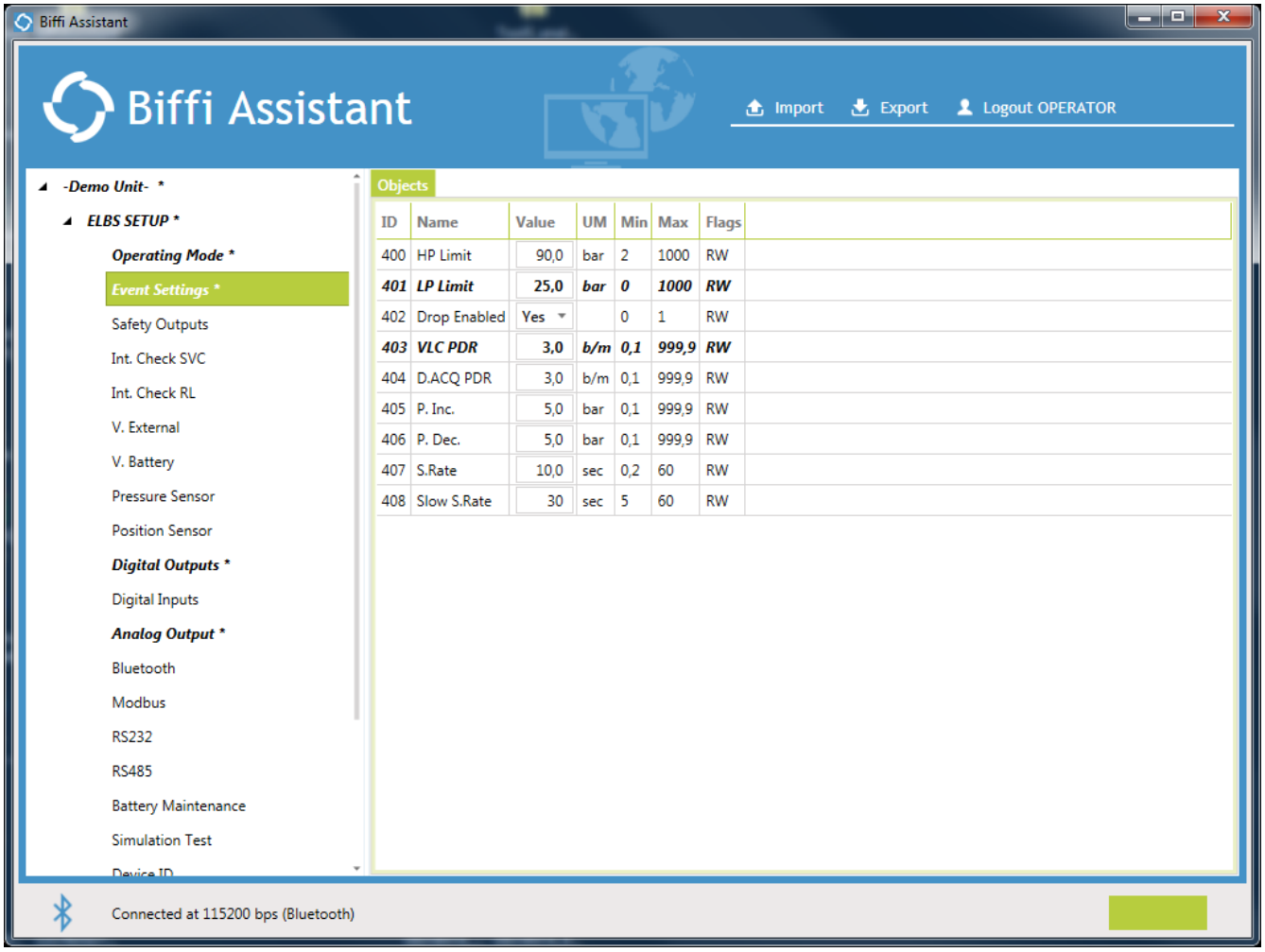


4.3.4 Write all the parameters of the Device

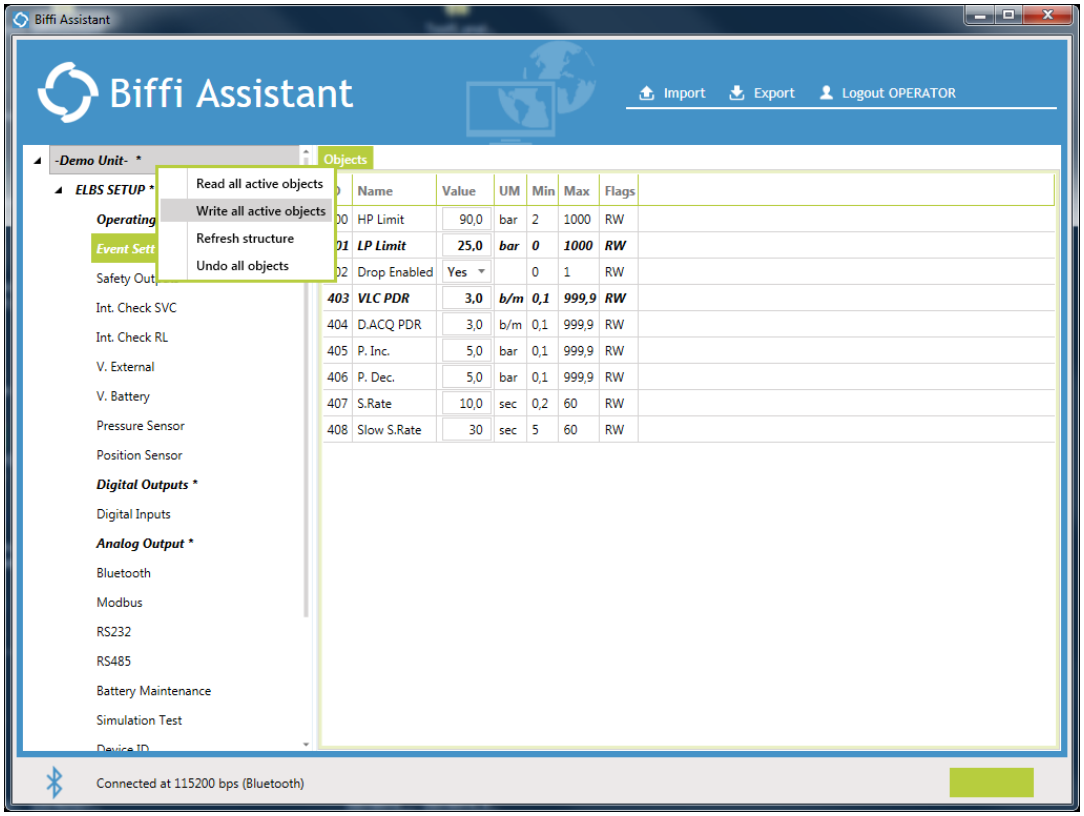
Warning:

During the connection process (see 3.2) the value of the parameters is not updated.
Before performing the writing of all the parameters of the Device it is necessary to verify that all the parameters of the Device have the correct value.
Before performing the writing command, it is suggested to update the value of the parameters (see 4.2.4) or to import a valid file (see 5).

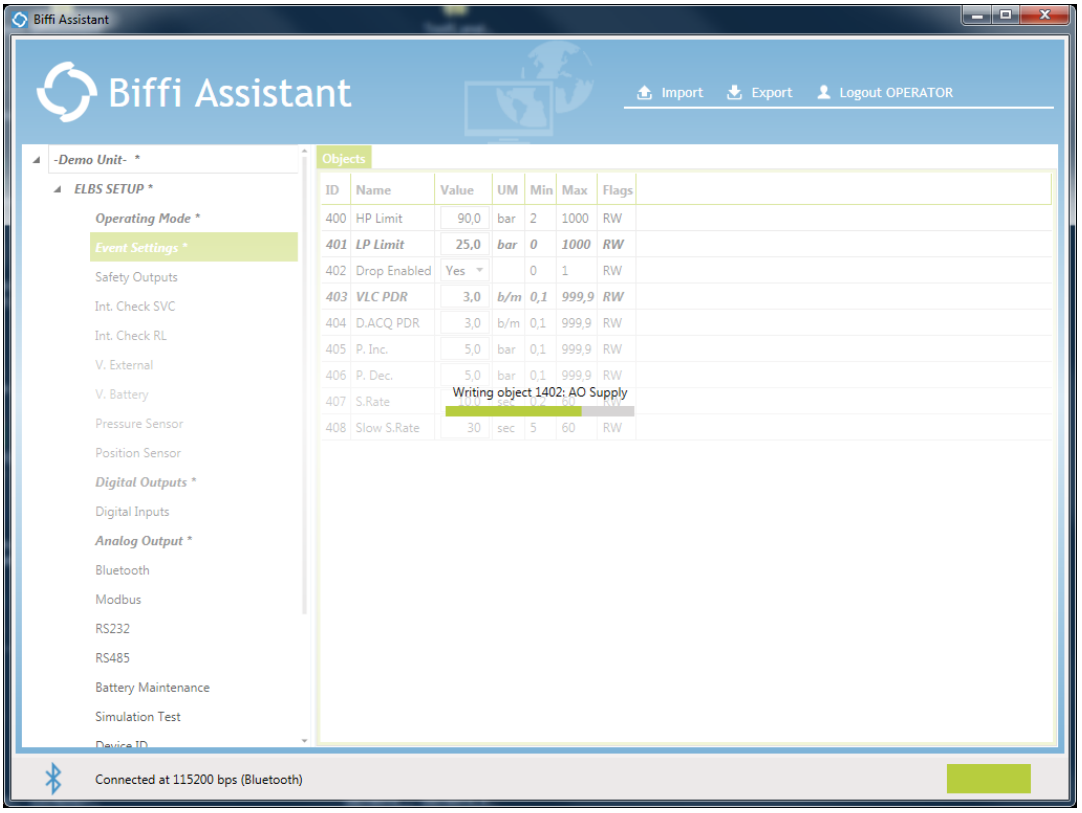
Select, through the mouse, the “Value” field of the parameters that must be written and type the new values or select the new values from the available list (it depends on the type of parameter).



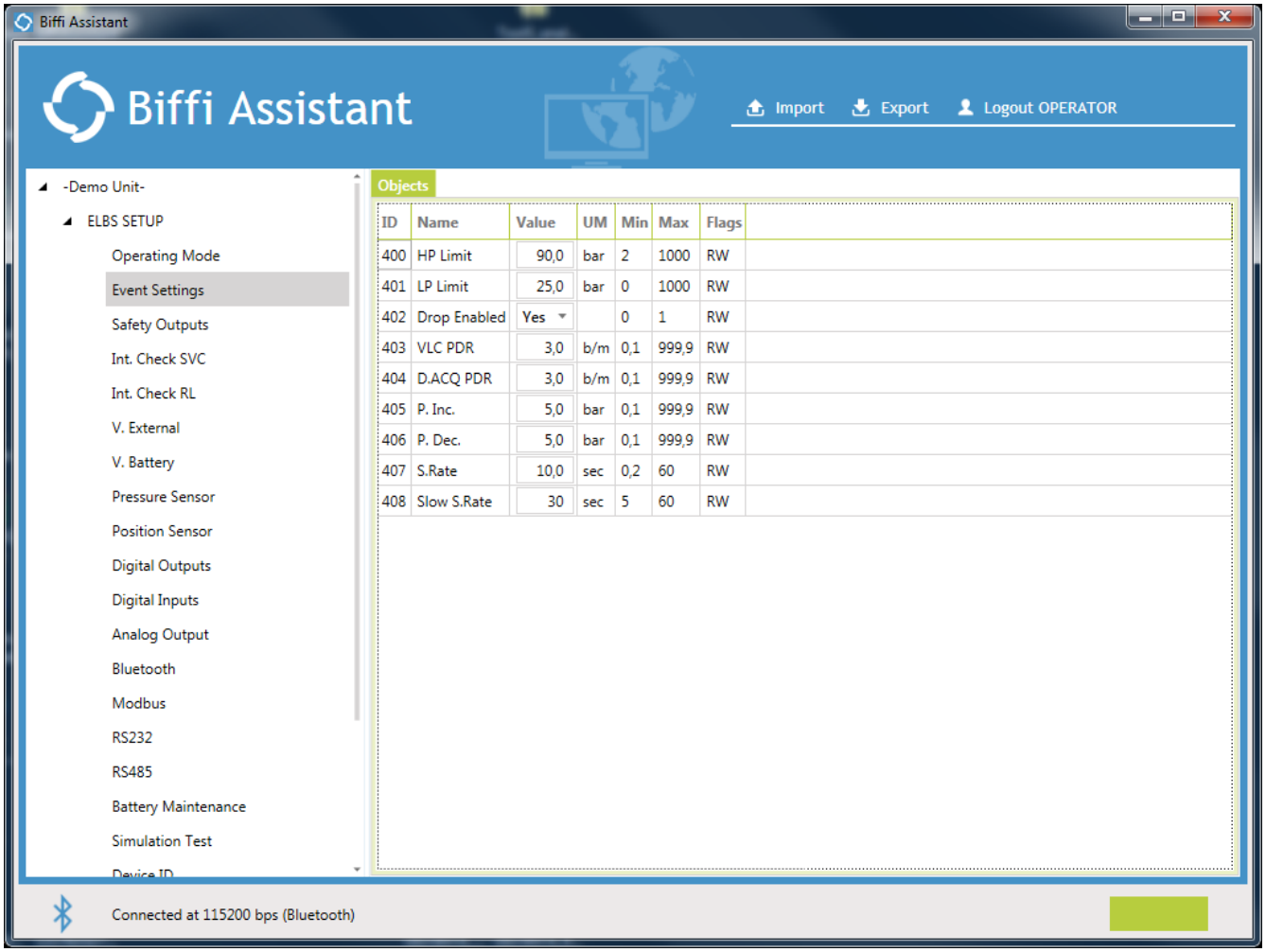
Right-click of the mouse on the name of the Main Menu then left-click of the mouse on “Write all active objects” and confirm the writing operation (a confirmation window appears).
Left-click of the mouse on “Undo all objects” to cancel the writing operation.



The writing of the parameter starts.



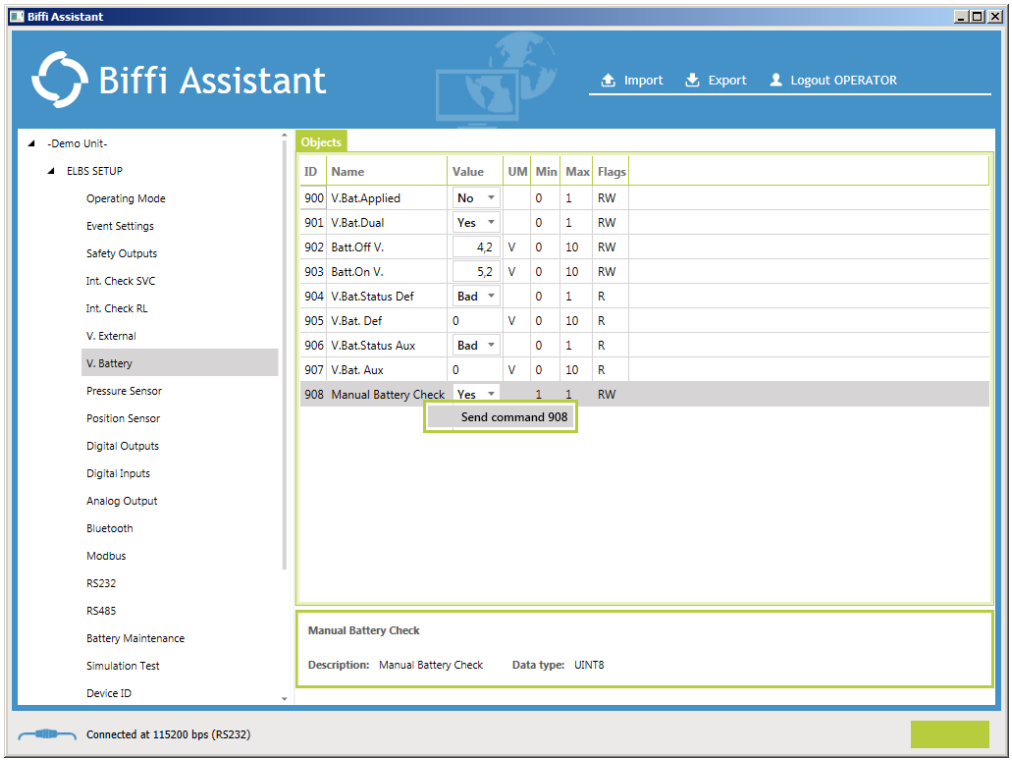
Wait Until the updating process stops.



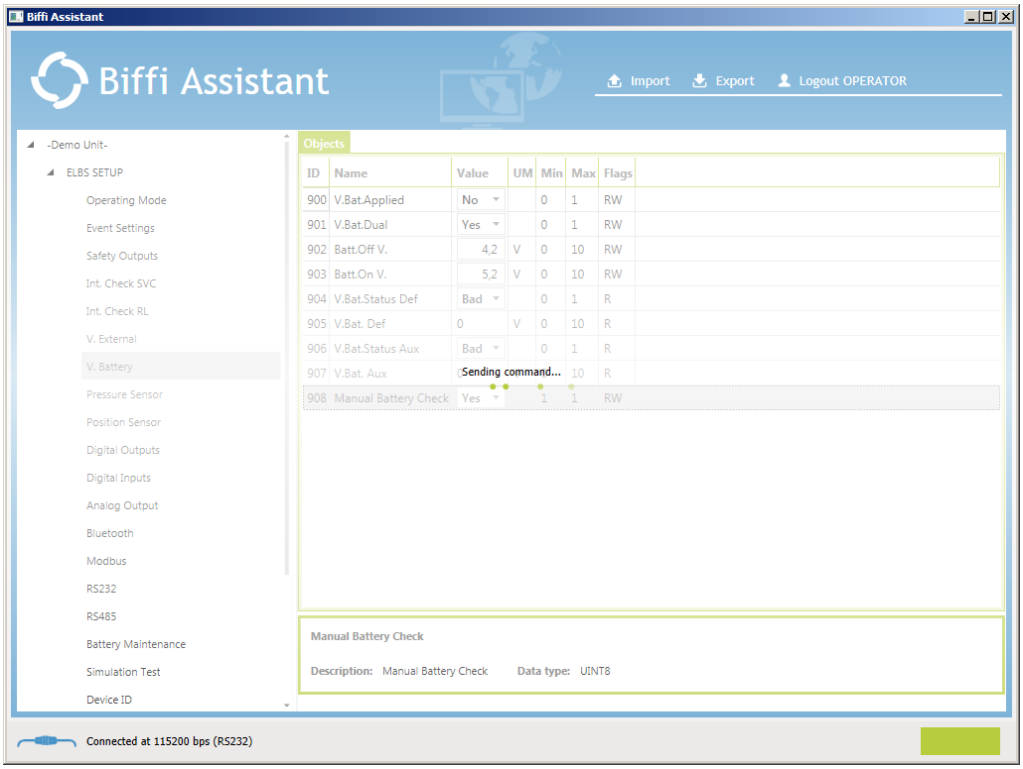
4.4 Launch/Send a command

The commands are classified as “RW” into the “Flags” field (see 6 for the full list of commands).

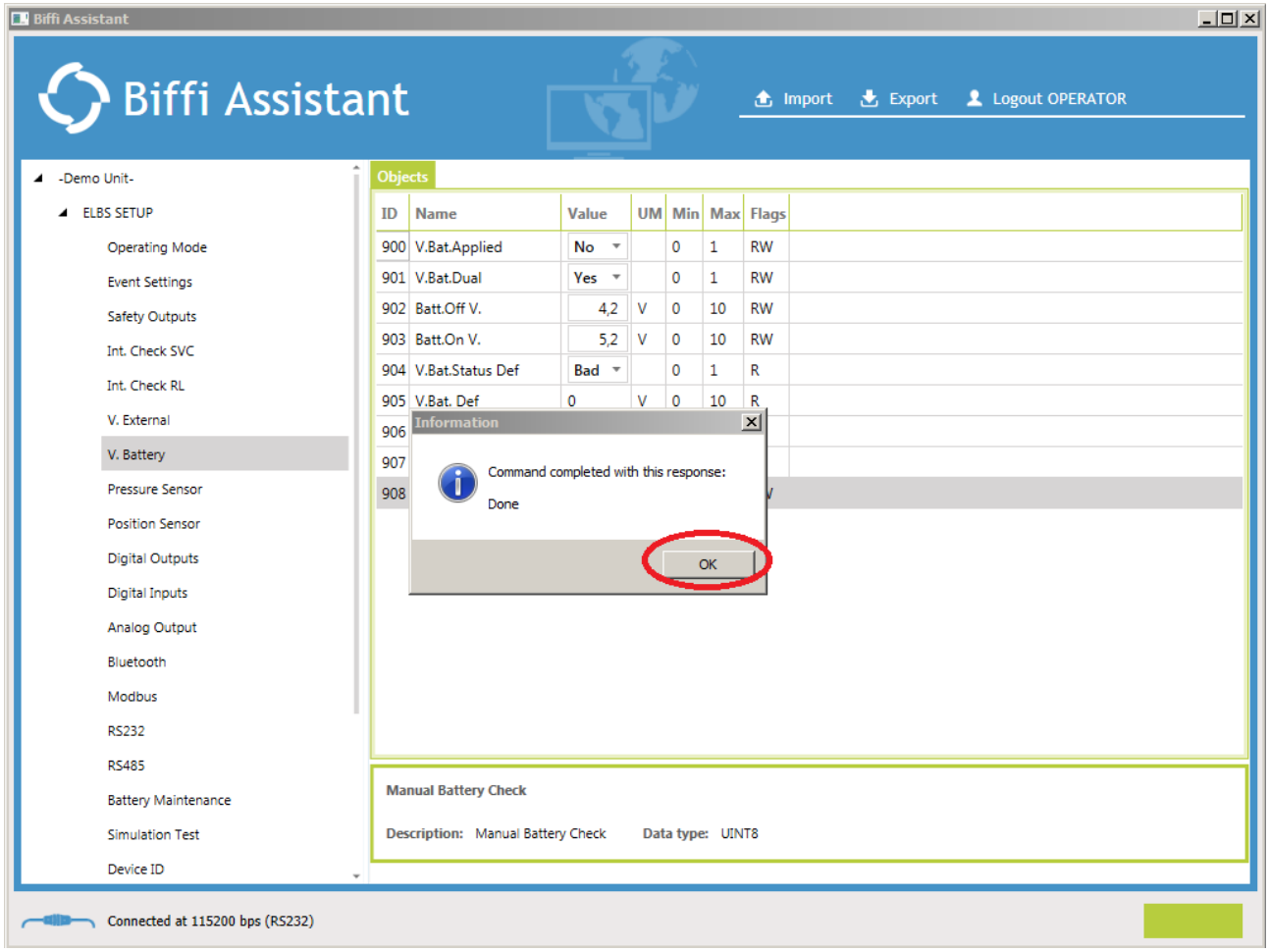
Right-click of the mouse on the row of the command that must be sent and then left-click of the mouse on “Send command *Command ID”*.



The command is performed.



Wait Until the command is completed and left-click of the mouse on the “OK” button of the Information Window that appears.



4.5 Change Password

4.5.1 Change “Online” Password

The ELBS-20 has four levels of Password for working online (see 3.3); the only one that can be changed by the User is the “Operator” password.
The ELBS-20 does not allow changing the “Operator” password through the Biffi-Assistant; it is necessary to use the Local Operator Interface (see [1]) for performing this operation.

4.5.2 Change “Offline” Password

See 5.1.2.1.

5 Import/Export File

Warning:

- It is recommended to use only one Serial Communication Interface (RS232, Bluetooth or RS485) per time to avoid configuration errors.
- It is mandatory to use just one of the following interfaces of the ELBS-20 per time, during the execution of the “Load Event List” command and the Export operation: RS232, Bluetooth or RS485 (see 7).
- It is mandatory not to use the Modbus interface, for reading events data, during the execution of the “Load Event List” command (see 7).

Important: The ELBS-20 automatically inhibits the using of the Local Operator Interface when one Biffi Assistant connection (RS232, Bluetooth or RS485) is active.

The Biffi Assistant provides the possibility to import and export the configuration files (parameters) and to export the stored graph of the ELBS-20.
It is also possible to work off-line to analyse/modify the exported files.

The Biffi Assistant allows exporting the files in two different ways:

- Biffi Assistant file (.biffia)
- Text file (.txt)

The Biffi Assistant allows importing only the Biffi Assistant files (.biffia).

5.1 Import File

The Biffi Assistant allows importing a configuration file in two ways:

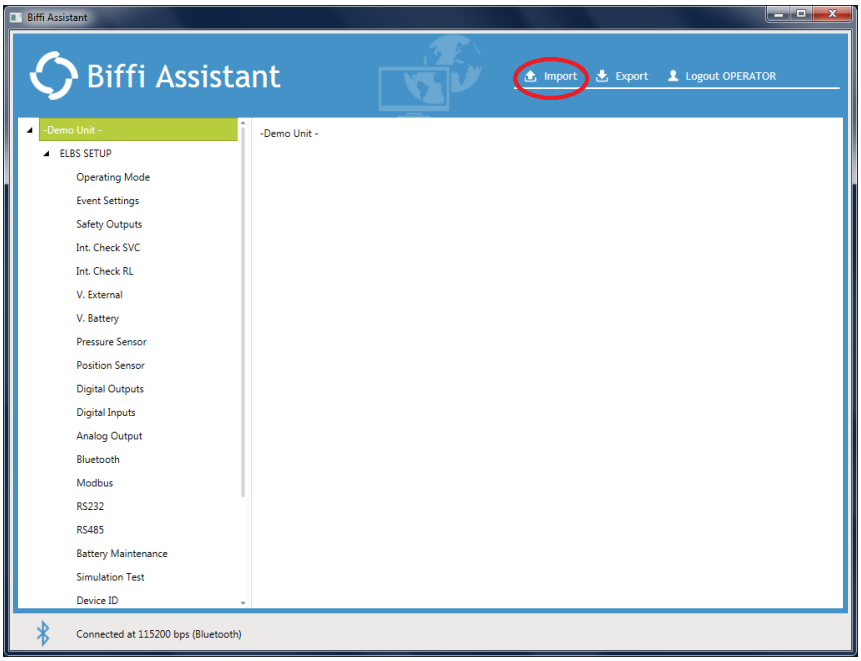
- Online (see 5.1.1)
- Offline (see 5.1.2)

5.1.1 Import File - Online

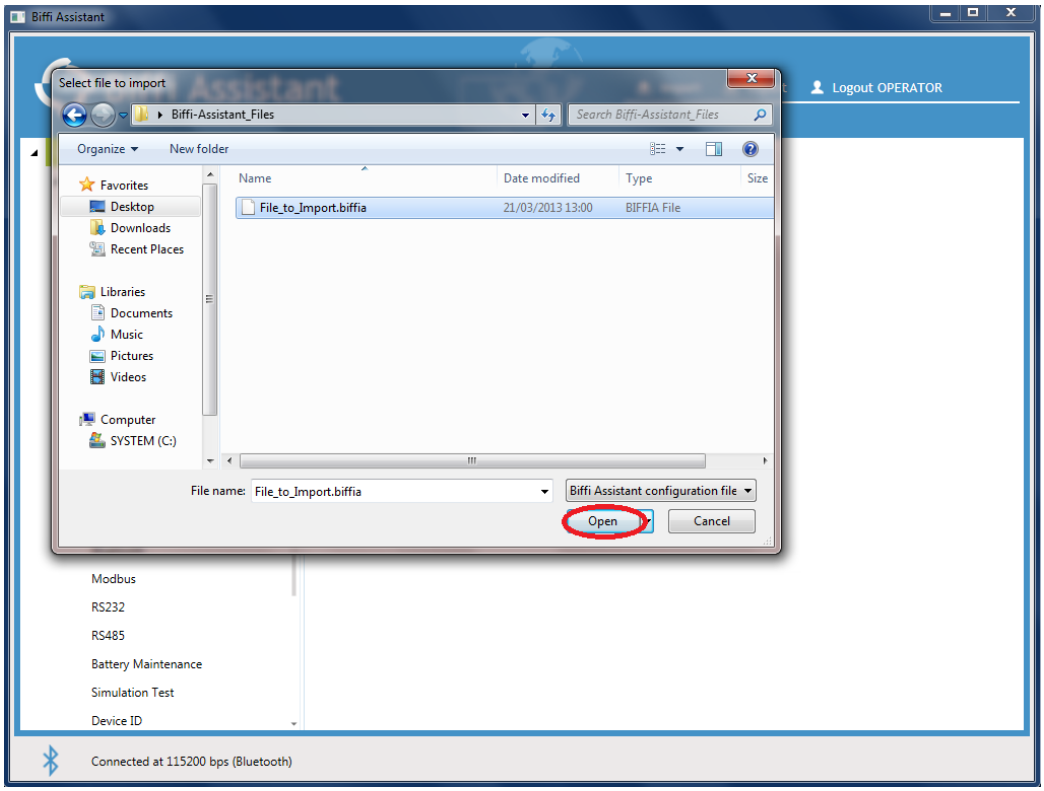
The importation of a configuration file trough Biffi Assistant is normally used for changing some or all the parameters of the device that is connected (Online).
For importing a file Online the following steps must be performed:

1. Establish a connection with the device (see 3).

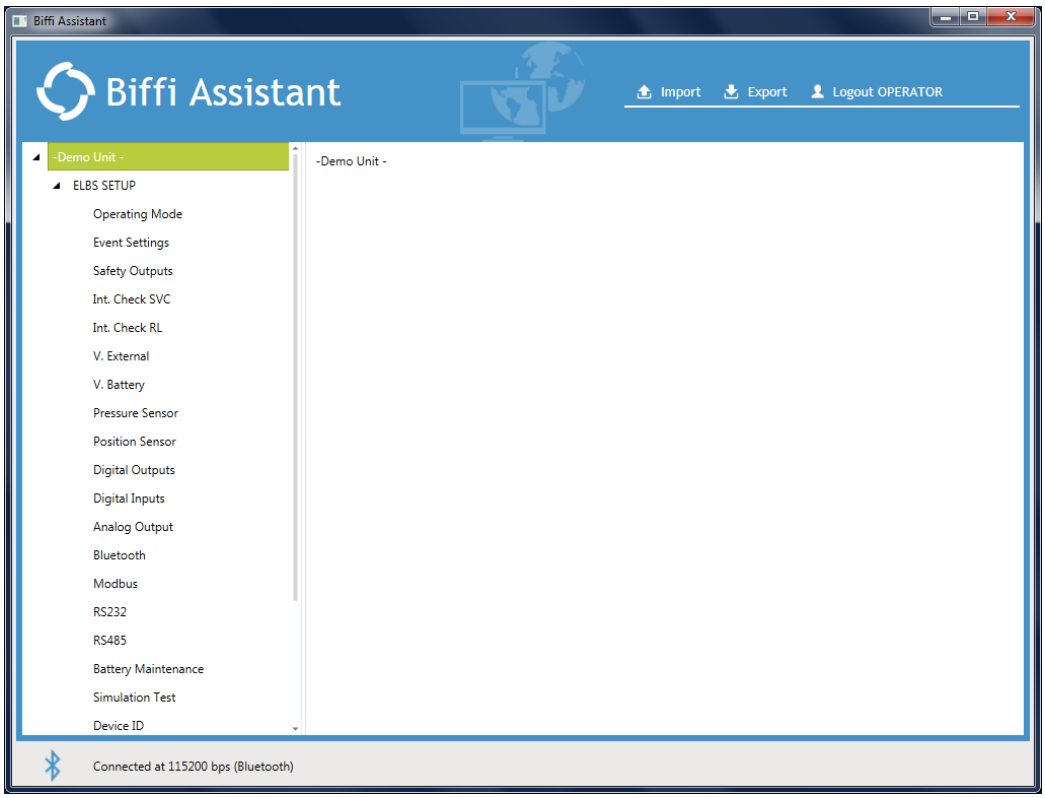
2. Left-click of the mouse on “Import”.



3. A “Windows Explorer” window is automatically opened. Browse for finding the file to import. Select the file to import and left click of the mouse on “Open”.



4. Wait until the file is imported.



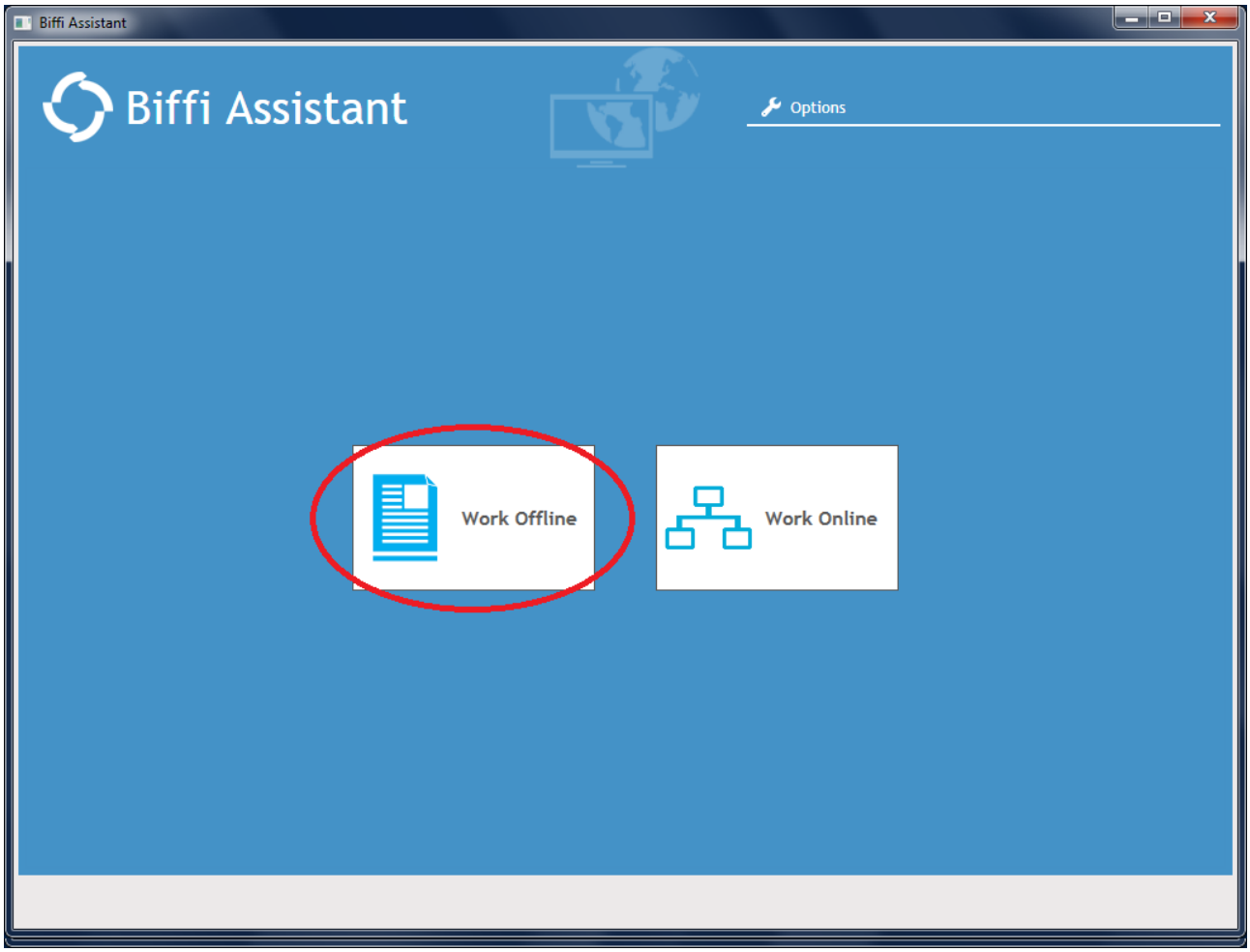
Now It is possible to download to the device the data imported by using one of the available writing procedures (see 4.3).

5.1.2 Import File – Offline

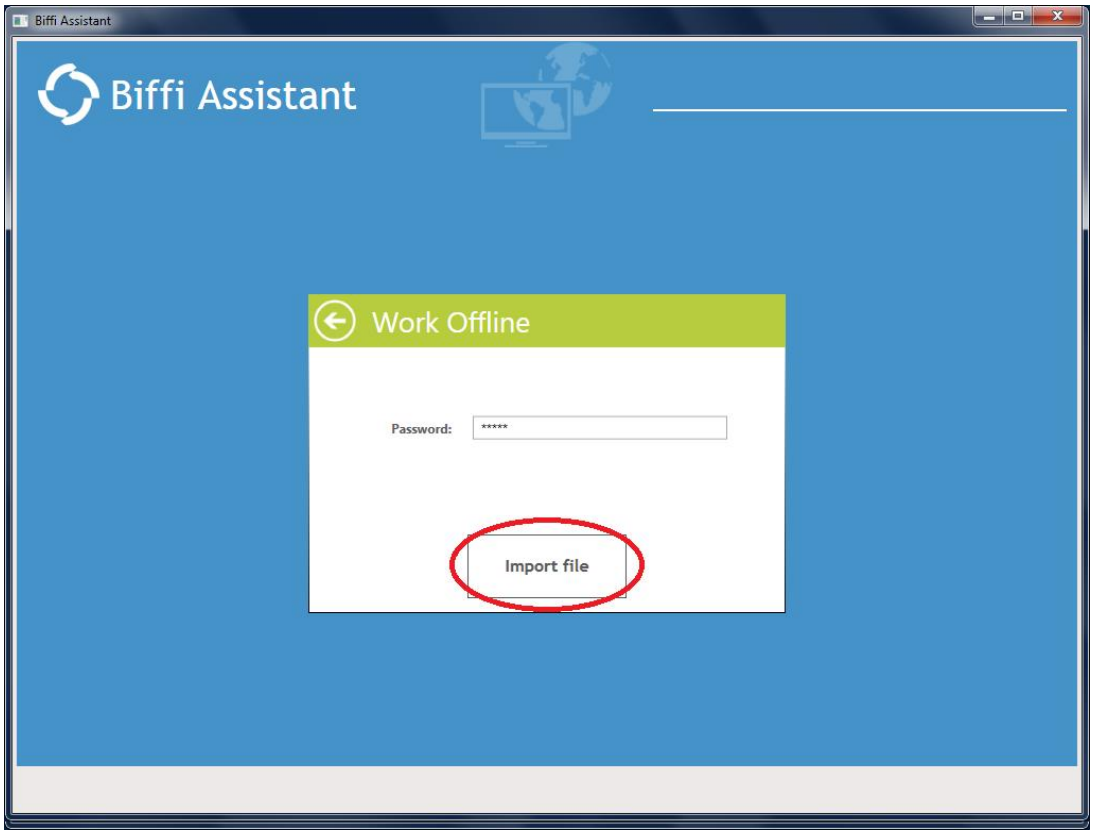
The Offline importation of Biffi Assistant file is normally used to analyse/modify the exported files.

For importing a file Offline the following steps must be performed:

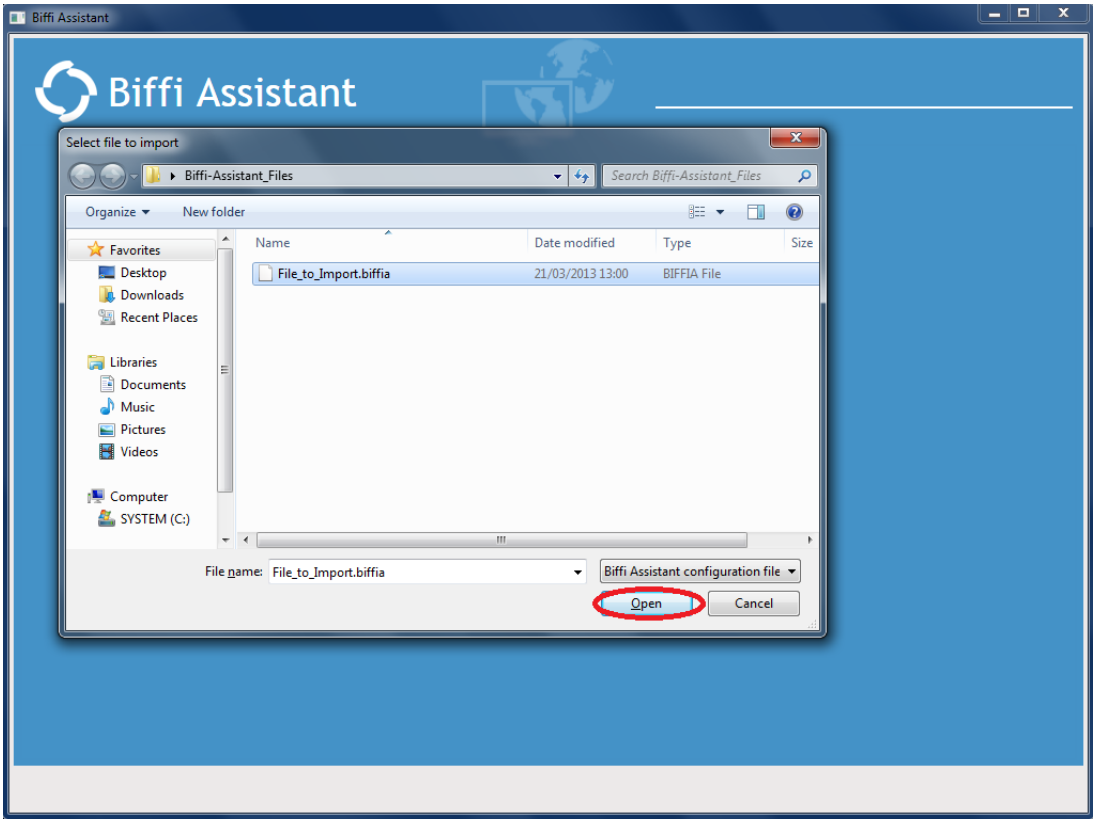
1. Open Biffi Assistant and left-click of the mouse on the “Work Offline” button.



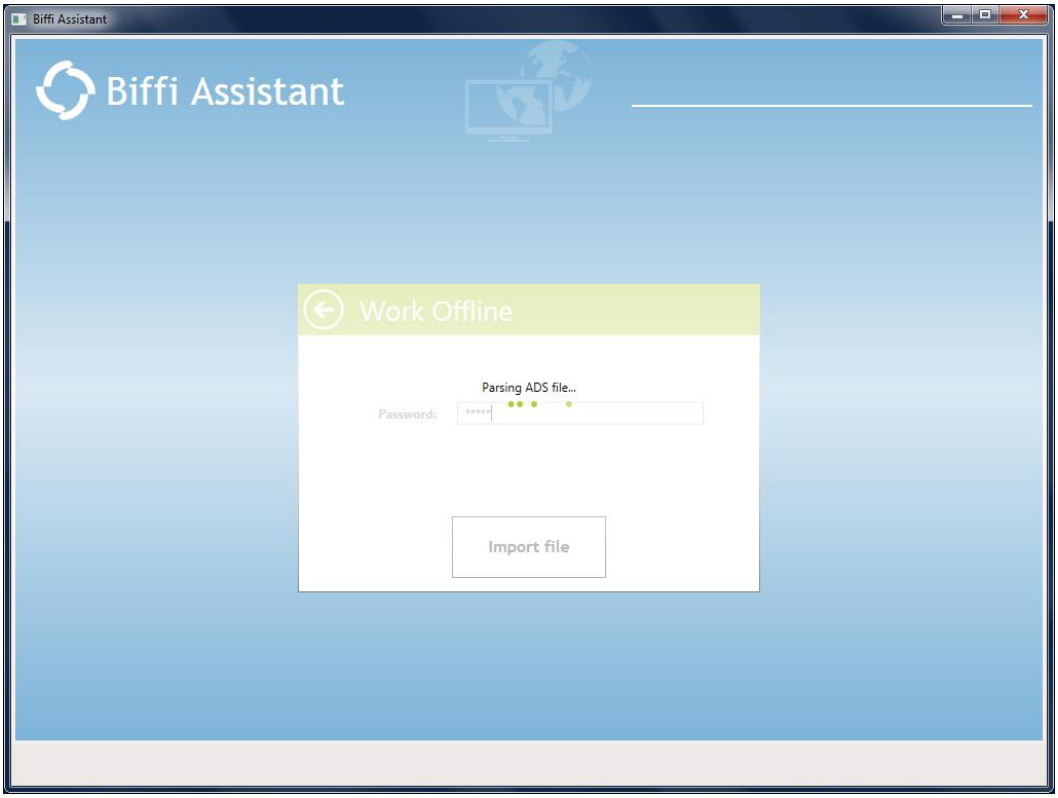
2. Insert the password and left-click of the mouse on “Import file”.
   To cancel the importation, left-click of the mouse on the left arrow.

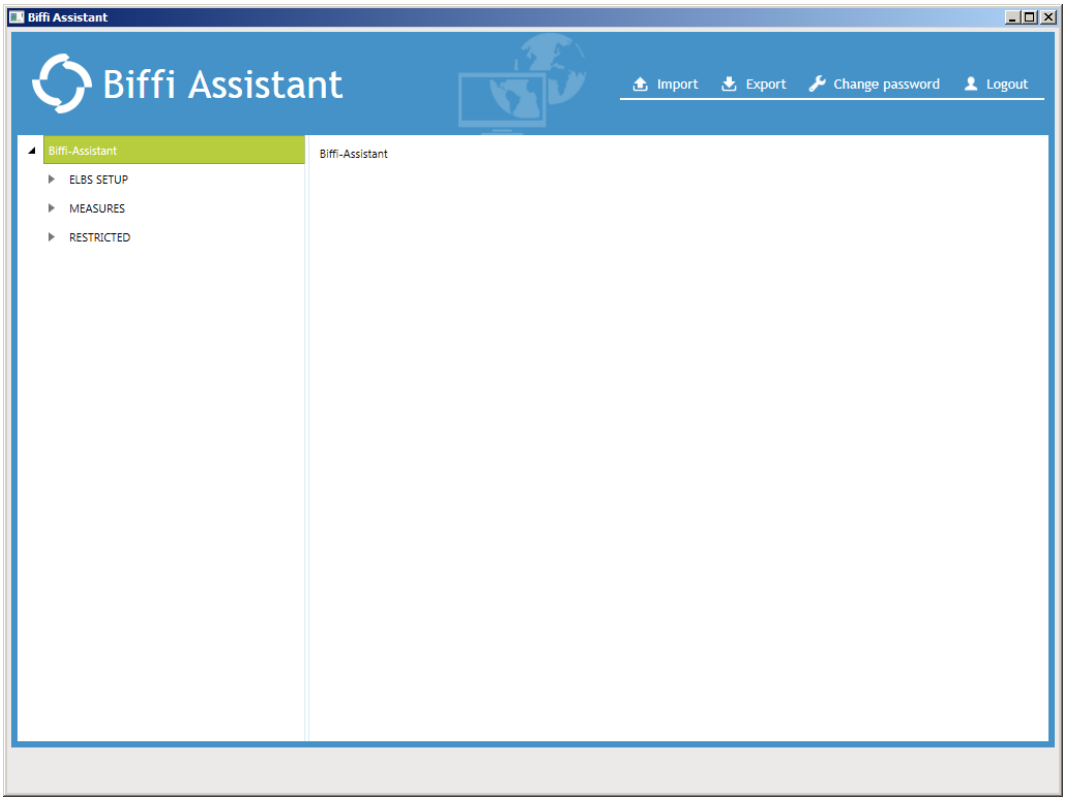


3. A “Windows Explorer” window is automatically opened. Browse for finding the file to import.
   Select the file to import and left click of the mouse on “Open”.



5. Wait until the file is imported.





Now it is possible to analyse Offline the imported data and to modify their value for creating a “new” Biffi Assistant file (see 5.2.2). For Logging Out, left-click of the mouse on “Logout”.

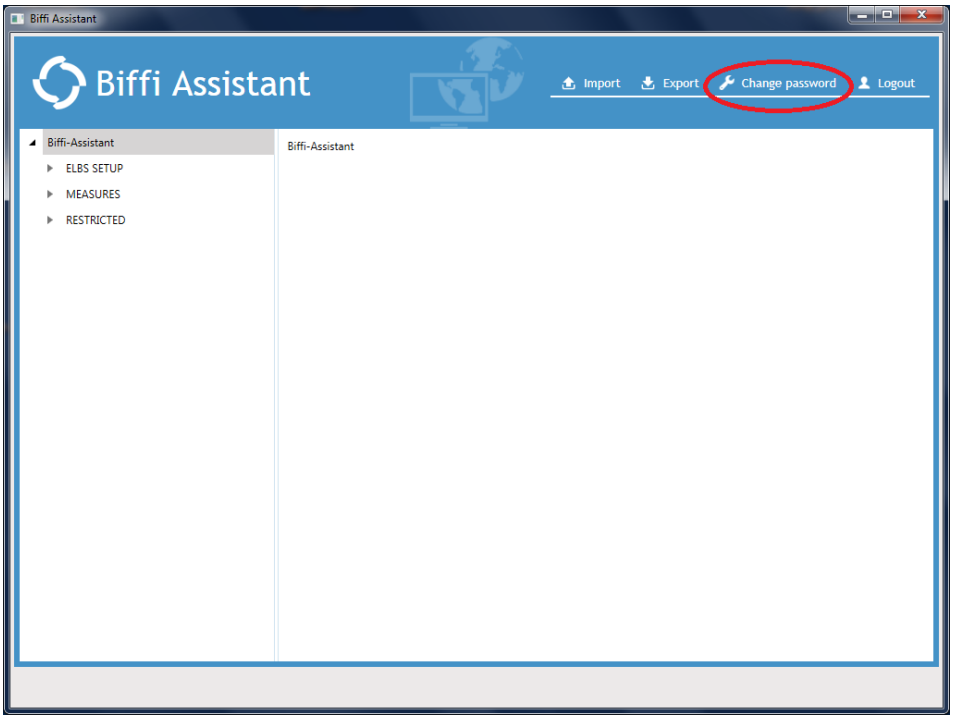
The type of data imported (parameters, graphs and parameters + graph) depends on how the exportation of the file was performed (see 5.2.1 and 5.2.2).

5.1.2.1 Change the Offline Password

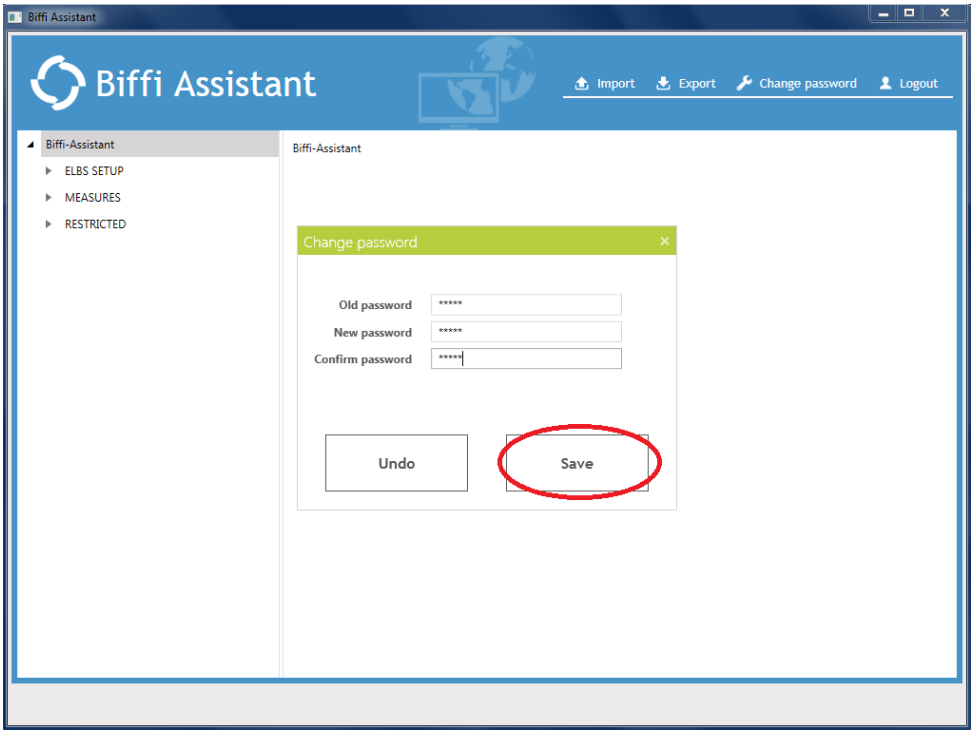
For changing the Offline password the following steps must be performed:

1. Import a file Offline (see 5.1.2).

2. Left-click of the mouse on “Change password”.



3. Write the Old password and the new one (twice) then left-click of the mouse on the “Save” button.



For re-establishing the default Offline password, the default settings must be restored (see 3.1).

5.2 Export File

The Biffi Assistant allows exporting the data of device in two ways:

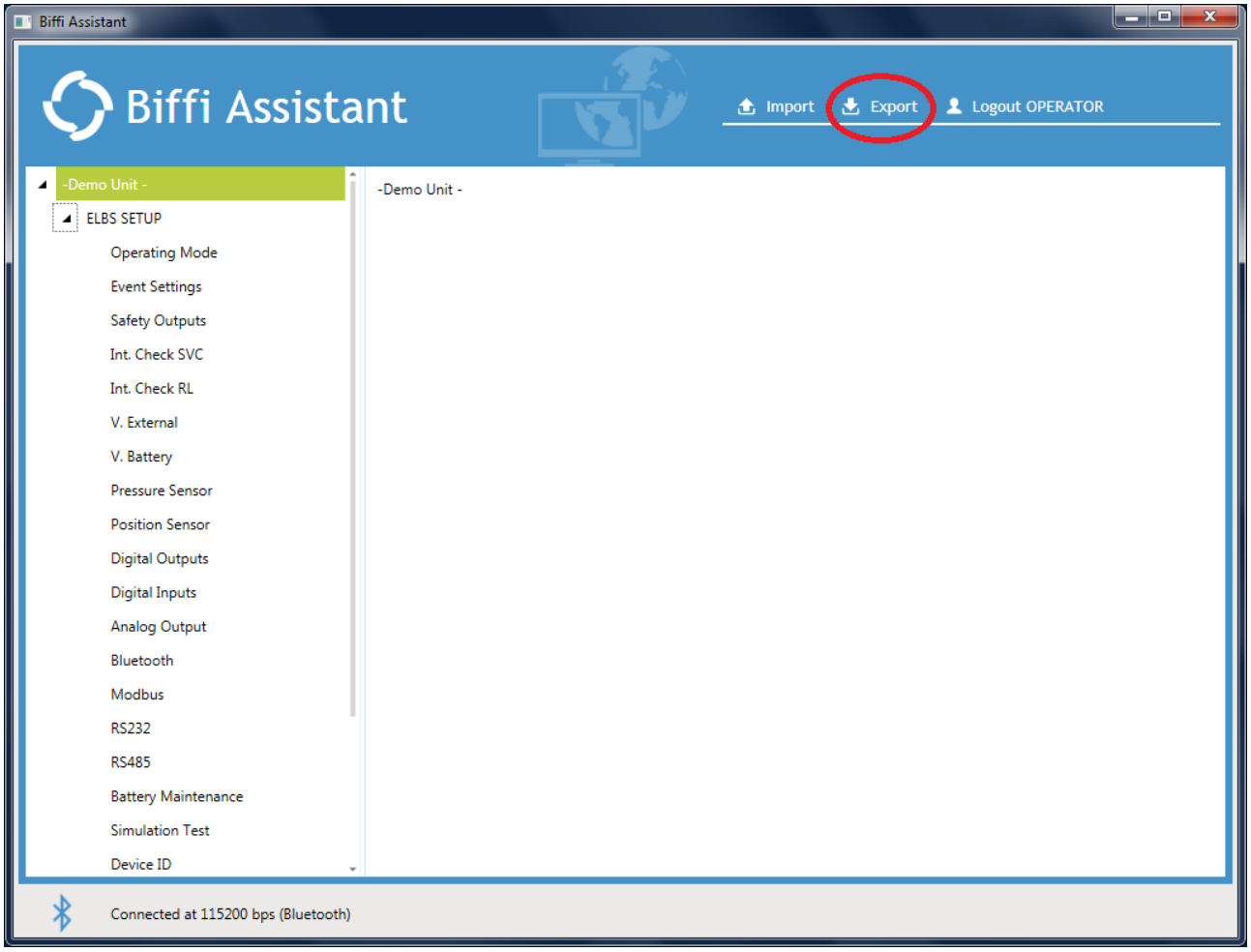
- Online (see 5.2.1)
- Offline (see 5.2.2)

5.2.1 Export File - Online

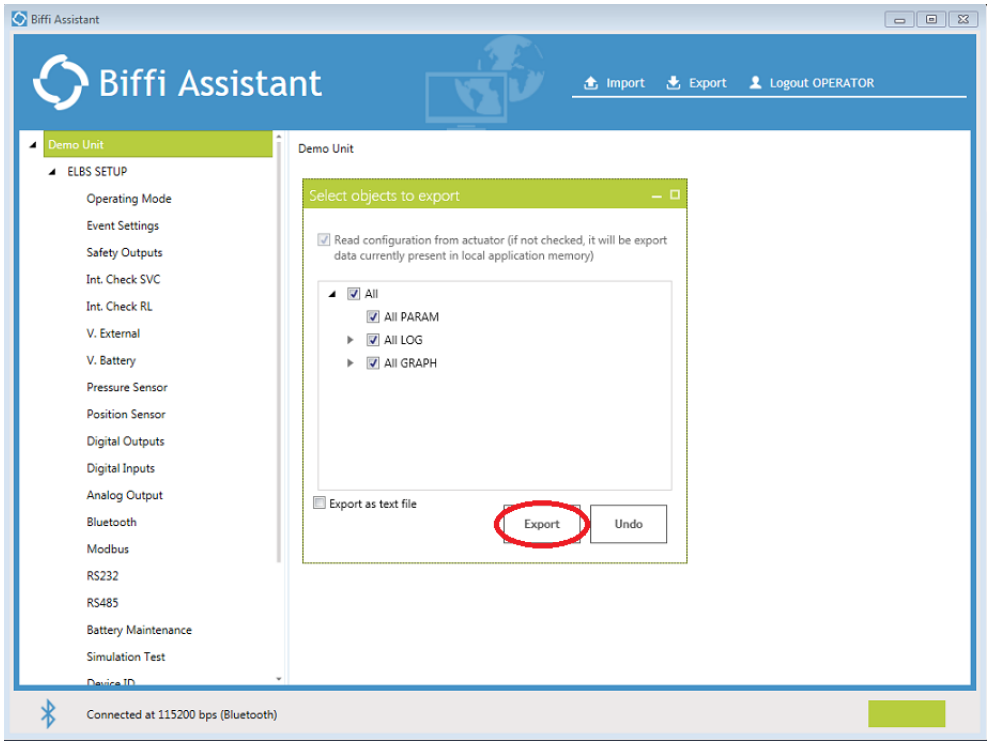
For exporting a file Online the following steps must be performed:

1. Establish a connection with the device (see 3).

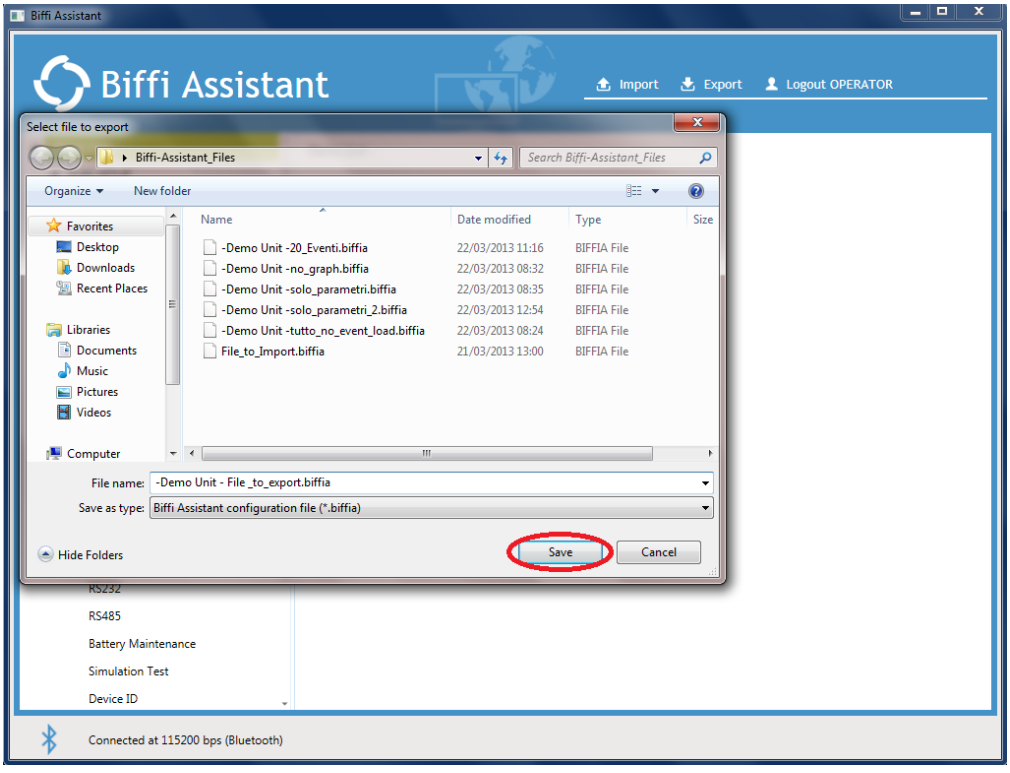
2. Left-click of the mouse on “Export”.



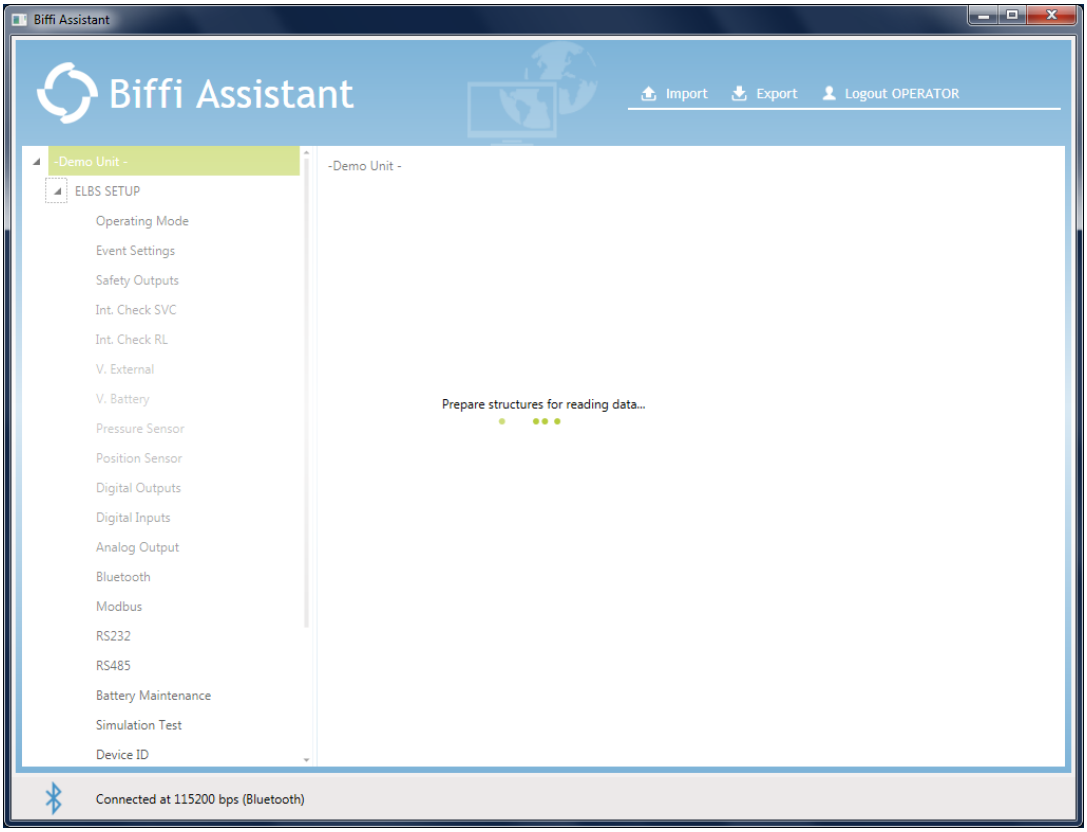
3. Select the Objects to export and left-click of the mouse on the “Export” button.
   Left-click of the mouse on the “Undo” button to cancel the exportation.
   Objects to export:
   - All PARAM: if checked, all the parameters of the ELBS-20 are exported
   - All LOG: it does not affect the exportation of the ELBS-20
   - All GRAPH: if checked, all the loaded graphs are exported (see 7.1.1 and 7.1.2)
   - Export as text file: if checked the file is exported as a text file otherwise as a Biffi Assistant file.



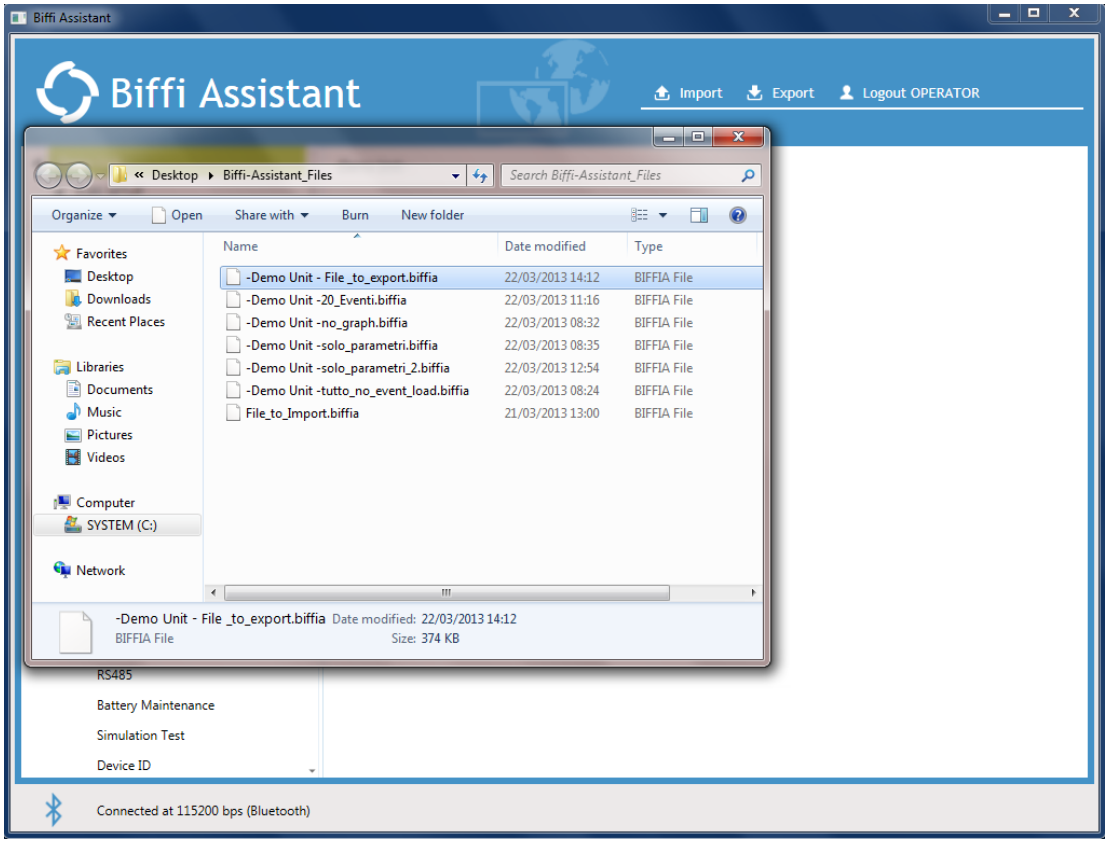
4. A “Windows Explorer” window is automatically opened. Browse for finding the folder to export the file. Write the name of the file and left-click of the mouse on “Save”. The file extension must be “.biffia” or “.txt”.



5. The exporting procedure starts.



6. A “Windows Explorer” window is automatically opened for verifying that the file is correctly saved. Close the “Windows Explorer” window to continue to work Online.



5.2.2 Export File – Offline

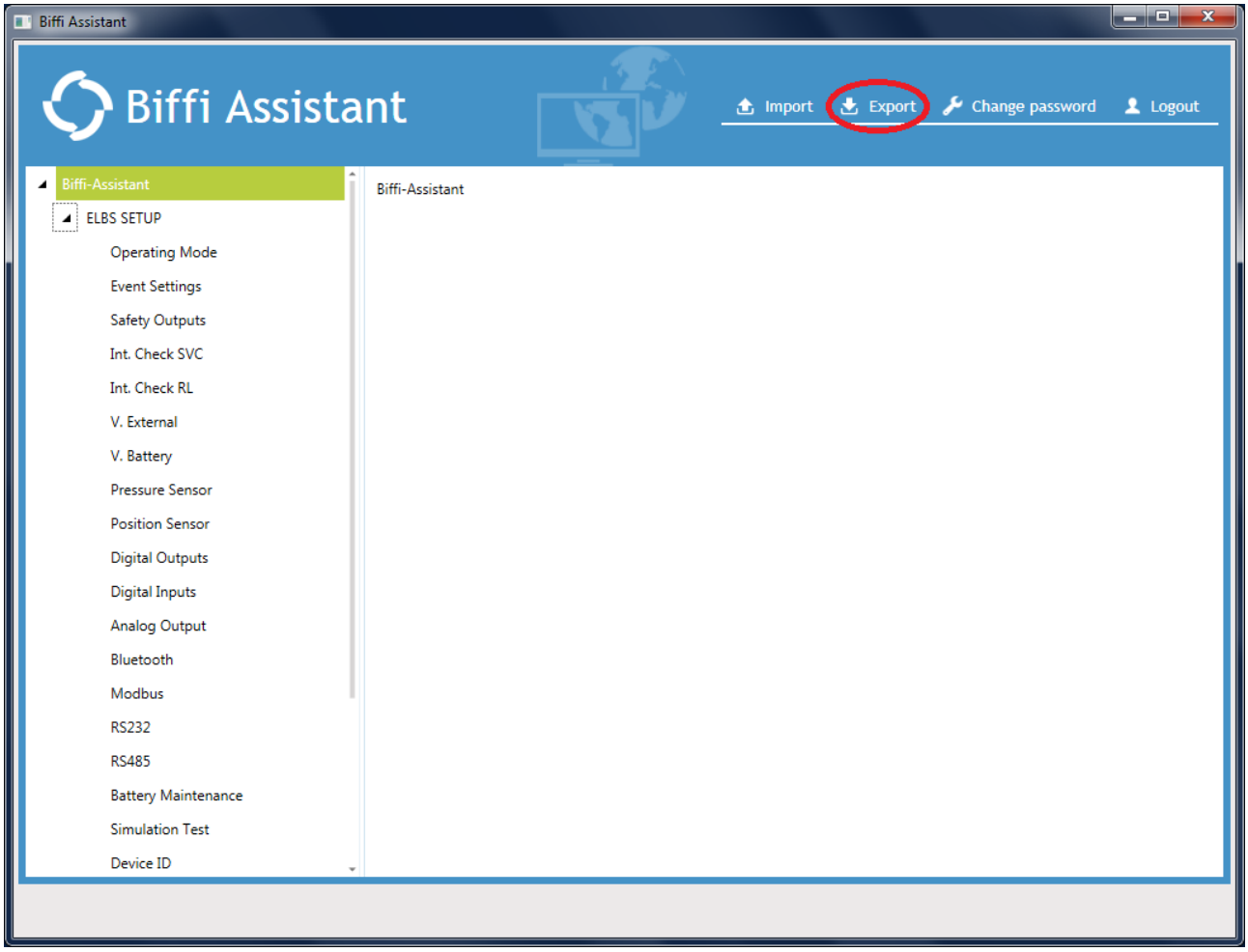
For exporting a file Offline the following steps must be performed:

1. Import a file Offline (see 5.1.2)

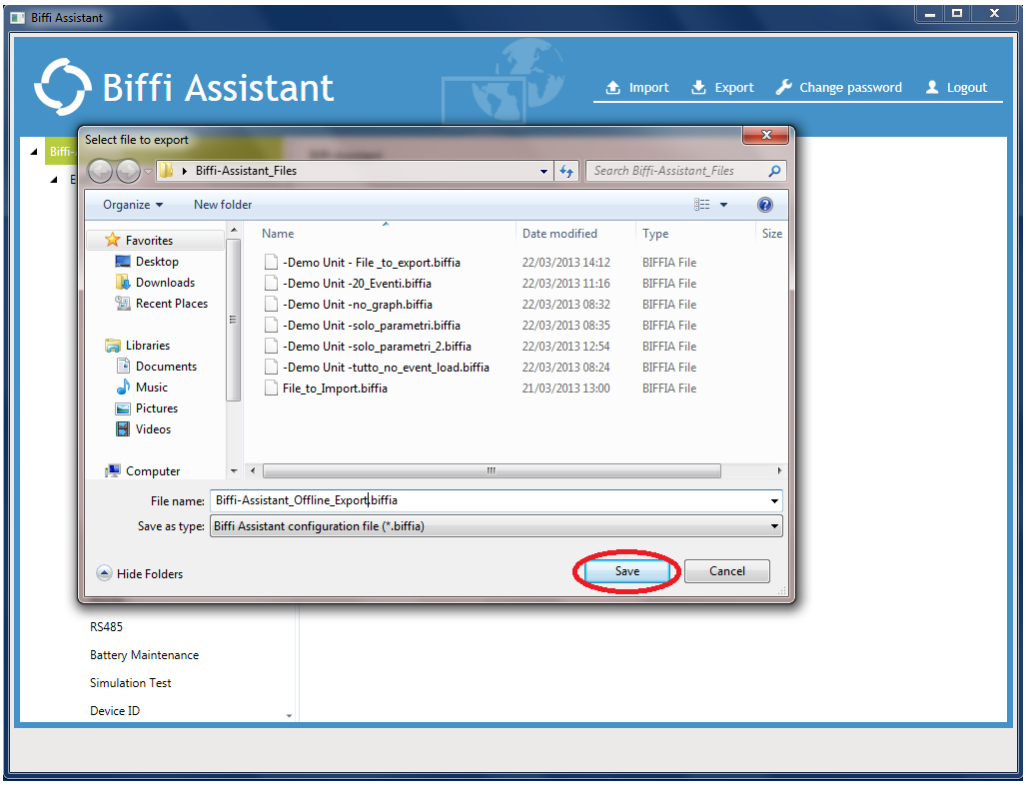
2. If it is necessary, modify the value of some parameters.

3. “Write all the parameters” of the device (see 4.3.4). This operation must be performed to correctly export the file.

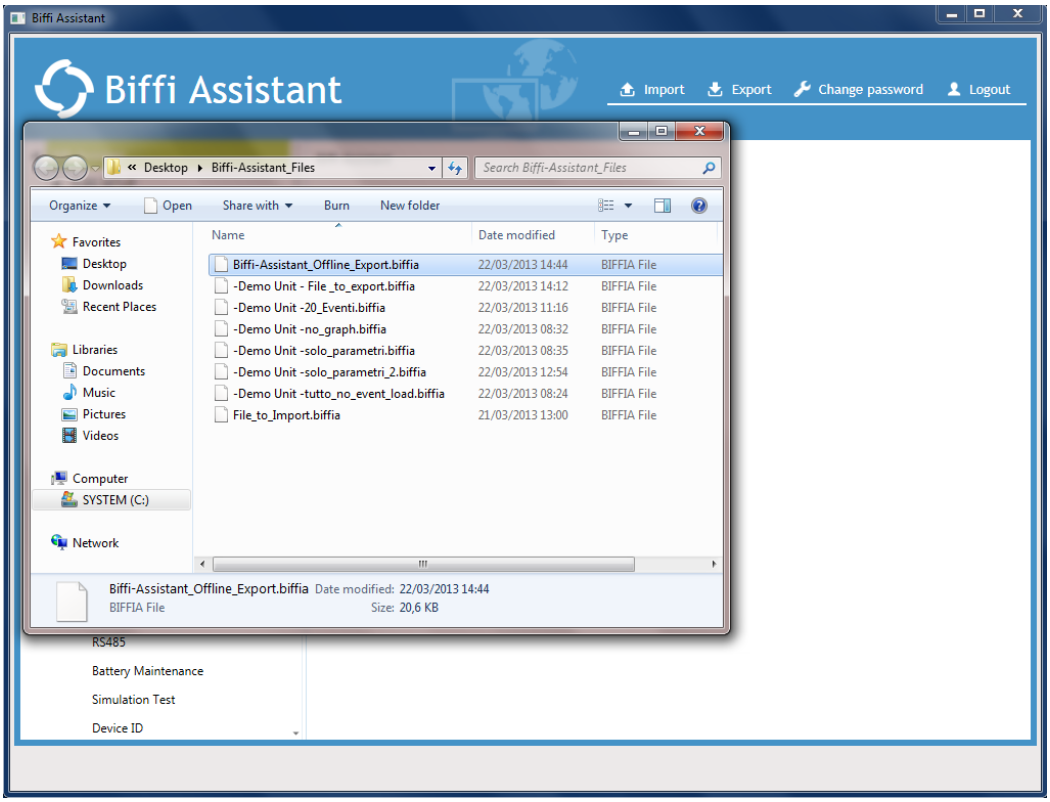
4. Left-click of the mouse on “Export”.



5. A “Windows Explorer” window is automatically opened. Browse for finding the folder to export the file. Write the name of the file and left-click of the mouse on “Save”. The file extension must be “.biffia”.



6. A “Windows Explorer” window is automatically opened for verifying that the file is correctly saved. Close the “Windows Explorer” window to continue to work Offline.



For Logging Out, left-click of the mouse on “Logout”.

6 List of parameters

For details about all the parameters excepting the ones of the “Events Menu”, see [1].
For details about the parameters of the “Events Menu”, see 7.

6.1 View Graph of the Biffi Assistant Menu

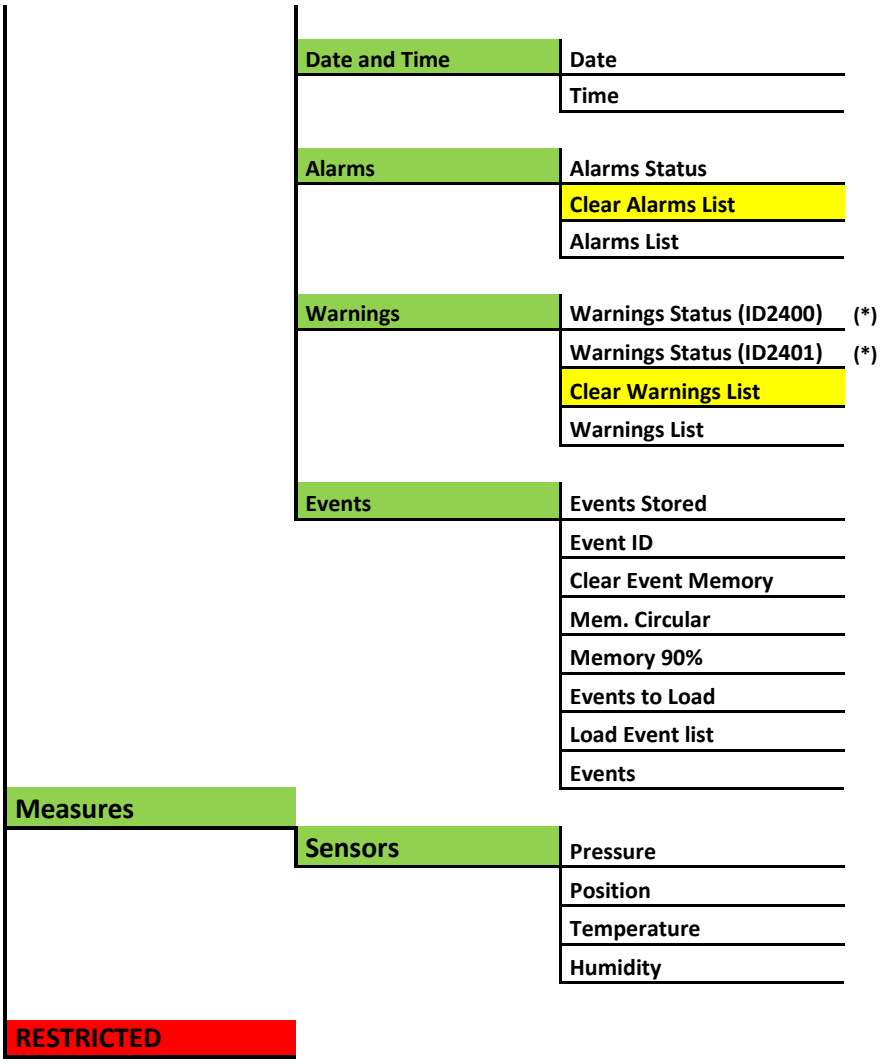
For making easier the reading of the View Graph, a different color is associated to the different entries of the menus.

	Menu and Sub-Menu
	Available Parameter
	Available Command/Calibration
	Unavailable Parameter or Command/Calibration (for Biffi use only)

“Blue. Name”	ELBS SETUP		
		Operating Mode	Operating Mode
			SA Done
			SA Source
			SA Date
			SA Time
		Event Settings	HP Limit
			LP Limit
			VLC PDR
			Drop Enabled
			D.ACQ PDR
			P. Inc.
			P. Dec.
			S.Rate
			Slow S.Rate
		Safety Outputs	SVC Enabled
			Relays Enabled
			Delay
			Duration
		Int. Check SVC	I.C. SVC En.
			I.C. SVC Time
			SVC1 Status
			SVC2 Status
			Start Manual I.C. SVC
		Int. Check RL	I.C. RL En.
			I.C. RL Time
			RL1 Contacts
			RL2 Contacts
			RL1 Status
			RL2 Status
			Start Manual I.C. RL

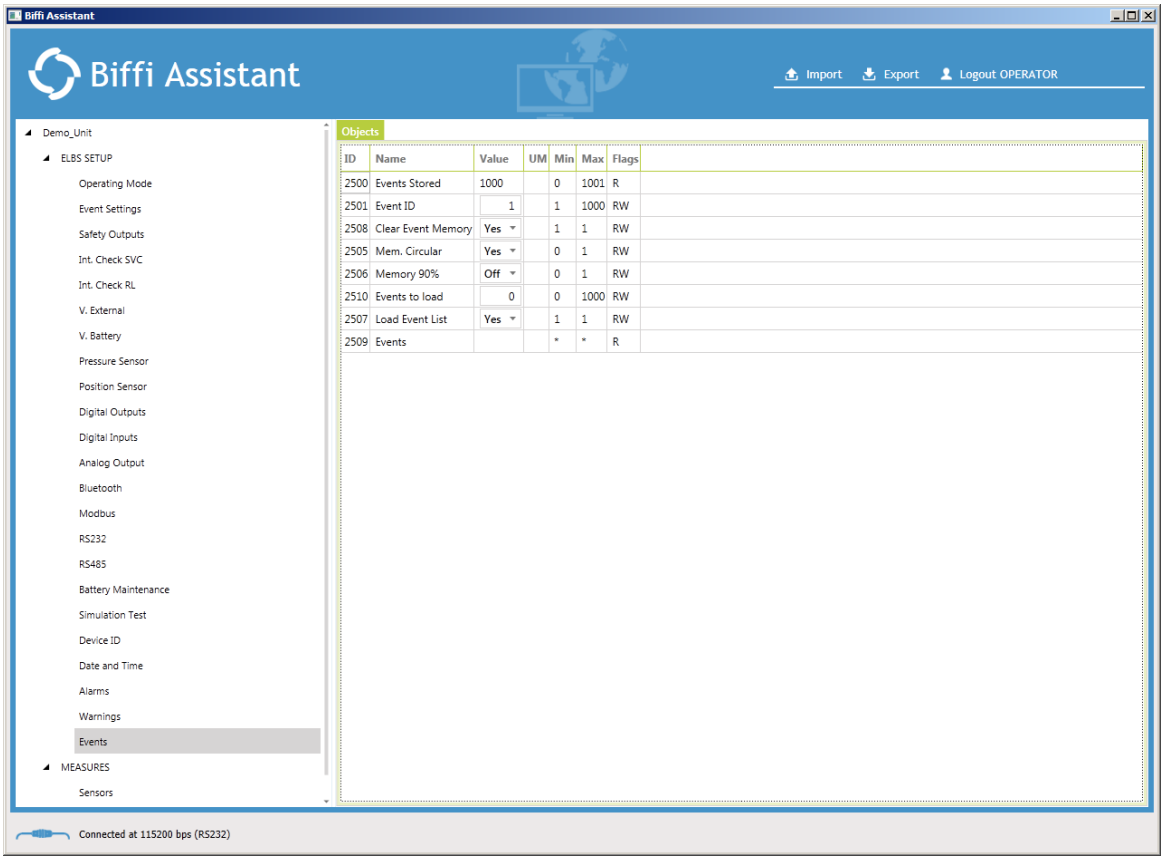
V. External	V.Ext. Applied
	V.Ext. Status Def
	V.Ext. Status Aux
V. Battery	V.Bat.Applied
	V.Bat.Dual
	Batt.Off.V.
	Batt.On.V.
	V.Bat. Status Def
	V. Bat. Def
	V.Bat. Status Aux
	V. Bat. Aux
	Manual Battery Check
Pressure Sensor	Pres. Signal
	Press. Min.
	Pres.Max
Position Sensor	Pos. Sens. En.
	Pos. Signal
	Pos. Op. Mode
Digital Outputs	DO1 Function
	DO1 Op. Mode
	DO1 Status
	DO2 Function
	DO2 Op. Mode
	DO2 Status
	DO3 Function
	DO3 Op. Mode
	DO3 Status
	DO4 Function
	DO4 Op. Mode
	DO4 Status
	DO5 Function
	DO5 Op. Mode
	DO5 Status
	DO6 Function
	DO6 Op. Mode
	DO6 Status
	DO7 Function
	DO7 Contact
	DO7 Op. Mode
	DO7 Status

Digital Inputs	DI1 Function
	DI1 Act. if
	DI1 Command
	DI1 Status
	DI2 Function
	DI2 Act. if
	DI2 Command
	DI2 Status
	DI3 Function
	DI3 Act. if
	DI3 Command
	DI3 Status
Analog Output	AO Enabled
	AO Selected
	AO Supply
	AO Op. Mode
	AO Value
Bluetooth	Blue. Enabled
	Blue. Type
	Blue. Name
Modbus	Mod. Enabled
	Mod. Address
	Mod. Baud
	Mod. Parity
	Mod. Term. Act.
RS232	RS232 Enabled
RS485	RS485 Enabled
	RS485 Term. Act.
Battery Maintenance	Last Batt. Maint.
	Next Batt. Maint.
	Batt. Mnt. Period
Simulation Test	T. Pr. Drop
	Start Test Pres. Drop
	Start Test Safe Act.
Device ID	Device Type
	Manufacturer
	Serial Number
	FW Int.
	FW Pro.
	Tag Name



(*): the “Warning Status” is split into two parameters.

7 Events Menu



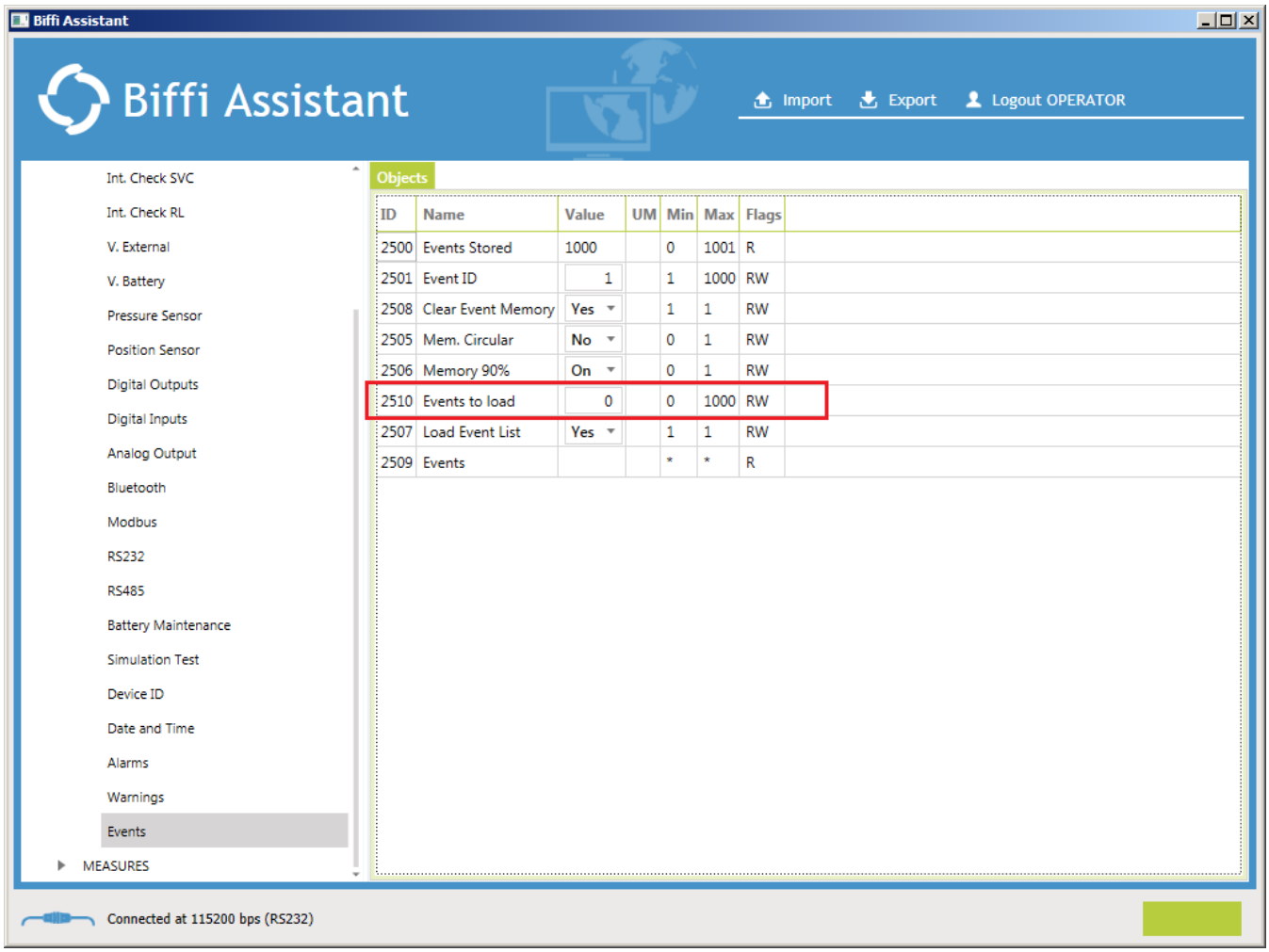
PARAMETER NAME	DESCRIPTION	RANGE	DEFAULT VALUE
Events Stored	It indicates the number of the stored events.	0-1000	0
Event ID	When “Events to load” is set to “0”, it indicates the event whose data (event type and date and time) and graph are shown through the “Events” parameter (see 7.1.1). When “Events to load” is not set to “0”, this parameter does not affect the “Events” parameter. The last event has the” Event ID” = 1 and the oldest event has the “Event ID” = “Events Stored”. It can be set up to the value of “Events Stored”.	1-1000	0
Clear Event Memory	The execution of this command clears the event data memory (every stored event is deleted). Its execution takes up to 40 seconds. It is a command (see 4.4).	Yes, No	No
Mem. Circular (Memory Circular)	Circular (Yes) = when the event memory is full the new event takes the place of the oldest (the first). The next one will take the place of the second one, etc. Not circular (No) = when the memory is full the acquisition function stops working. The ‘’ **Clear Event Memory** ‘’ command restarts the acquisition function. Valve control function remains active.	Yes, No	Yes
Memory 90 % (Memory 90%Full Warning)	If “Alarm 90%” is set as “On” and “Mem. Circular” = “Off”, a MEM90 warning is generated when the event data memory content reaches the 90%.	On, Off	Off
Events to load	It is the number of events (starting from the latest one) that are uploaded during the execution of the “Load Event List” command. It can be set up to the value of “Events Stored”.	0-1000	0
Load Event List	This command works only if the Operating Mode of the ELBS-20 is set to SLEEP. It is used for viewing more than one event per time (see 7.1.2). Its execution takes up to 1 hour (when “Events to load” = 1000). It is a command (see 4.4).	Send Command	-
Events	It is used for viewing the graphs and data of the stored events (see 7.1.1 and 7.1.2).	-	-

7.1.1 Load Single Event

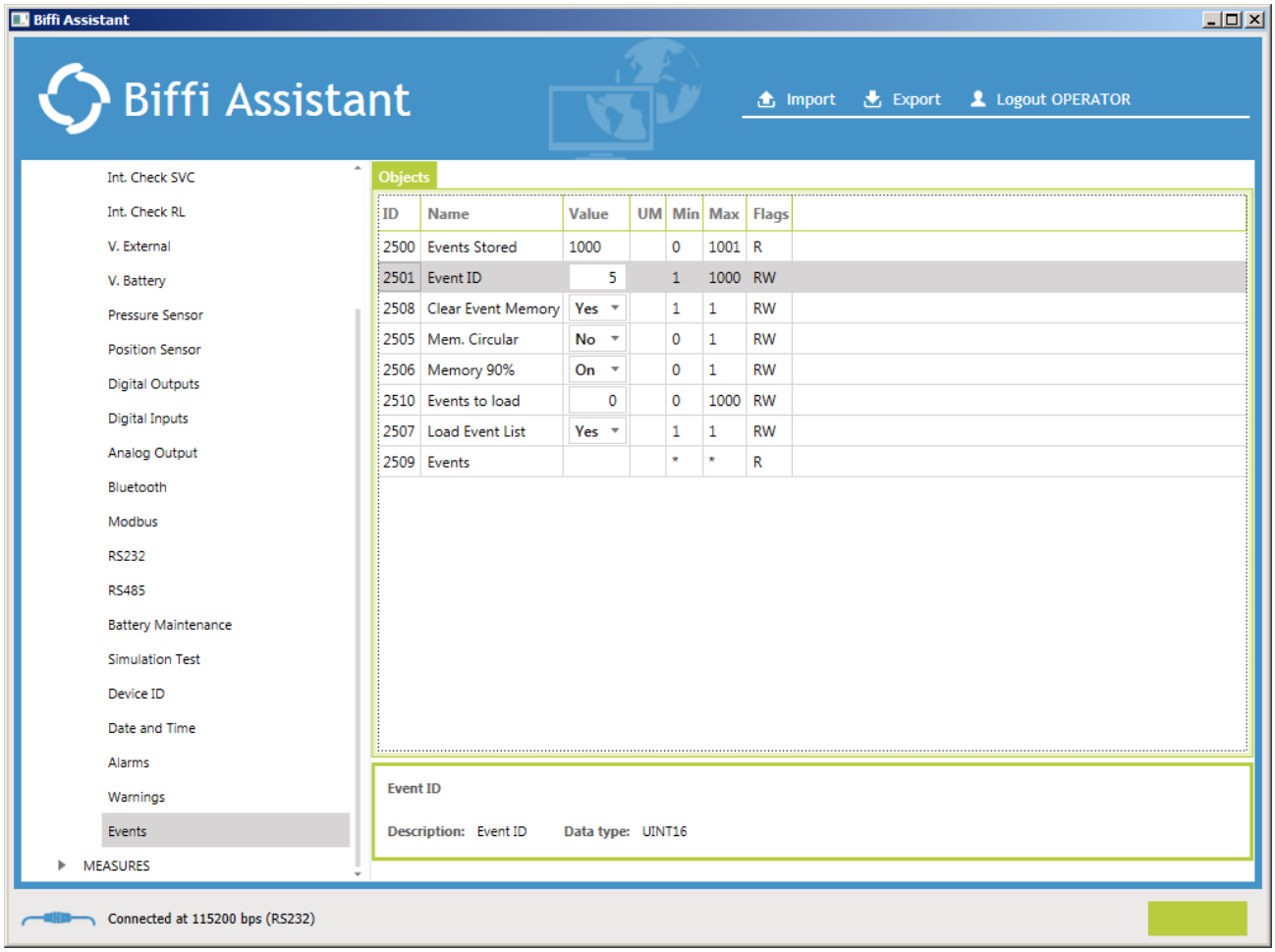
Warning: It is recommended to use only one Serial Communication Interface (RS232, Bluetooth or RS485) per time to avoid configuration errors.

Important: The ELBS-20 automatically inhibits the using of the Local Operator Interface when one Biffi Assistant connection (RS232, Bluetooth or RS485) is active.

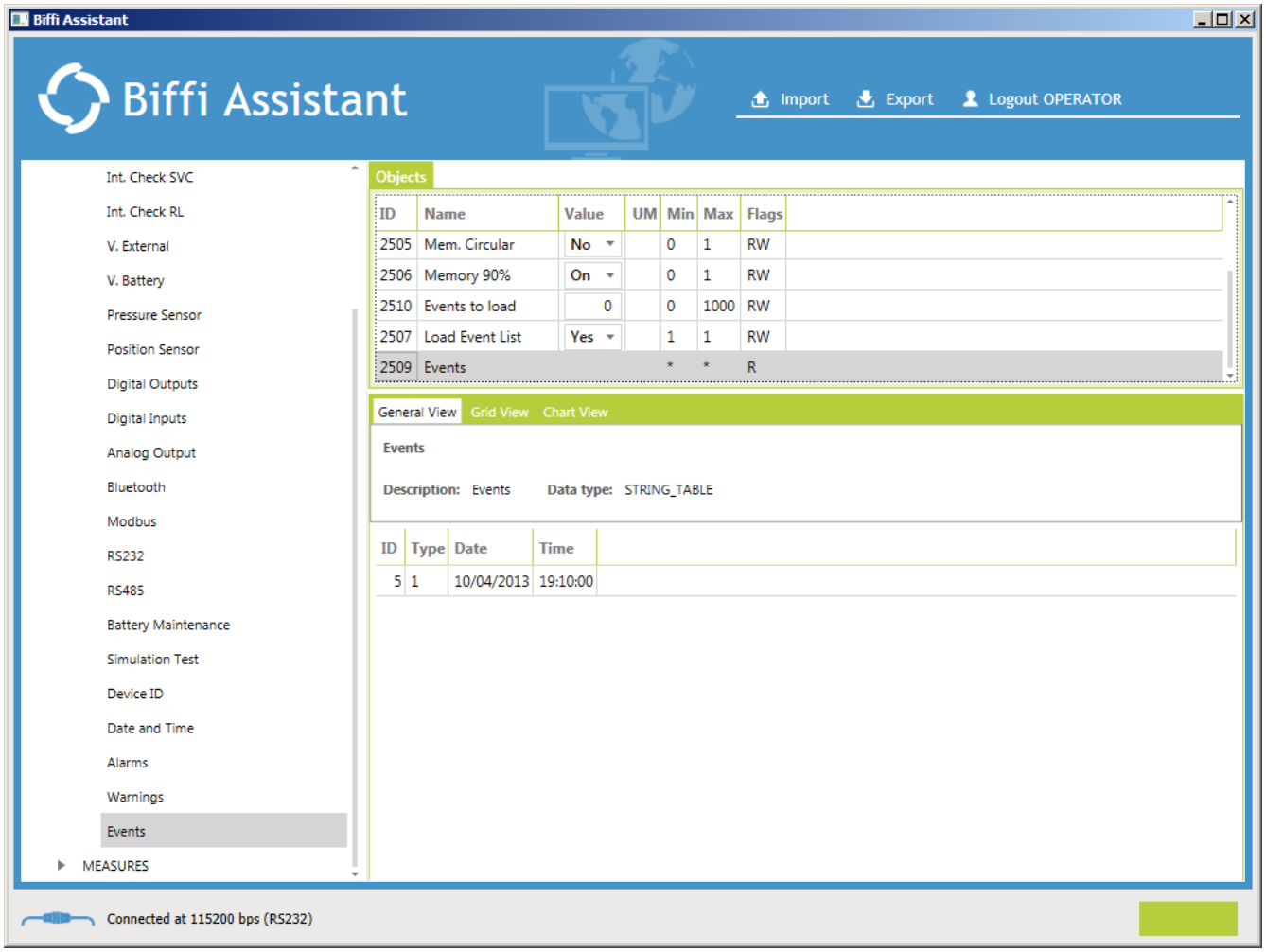
1. Verify that the value of the “Events to load” parameter is equal to 0.



2. Write (see 4.3.1) the desired value (5 in the screen below) of the “Event ID” parameter (see 7).



3. Read (see 4.2.1) the “Events” parameter and the following screen appears.



Now it is possible to view the data and graph relevant to the selected event (see 7.1.3).

It is also possible to export the data and the graph of the selected event (see 5.2.1).
If the Export operation of the graph is performed the data relevant to the event selected through the parameter “Event ID” are exported (the value of the “Events to load” parameter must be equal to 0).

7.1.2 Load Multiple Events

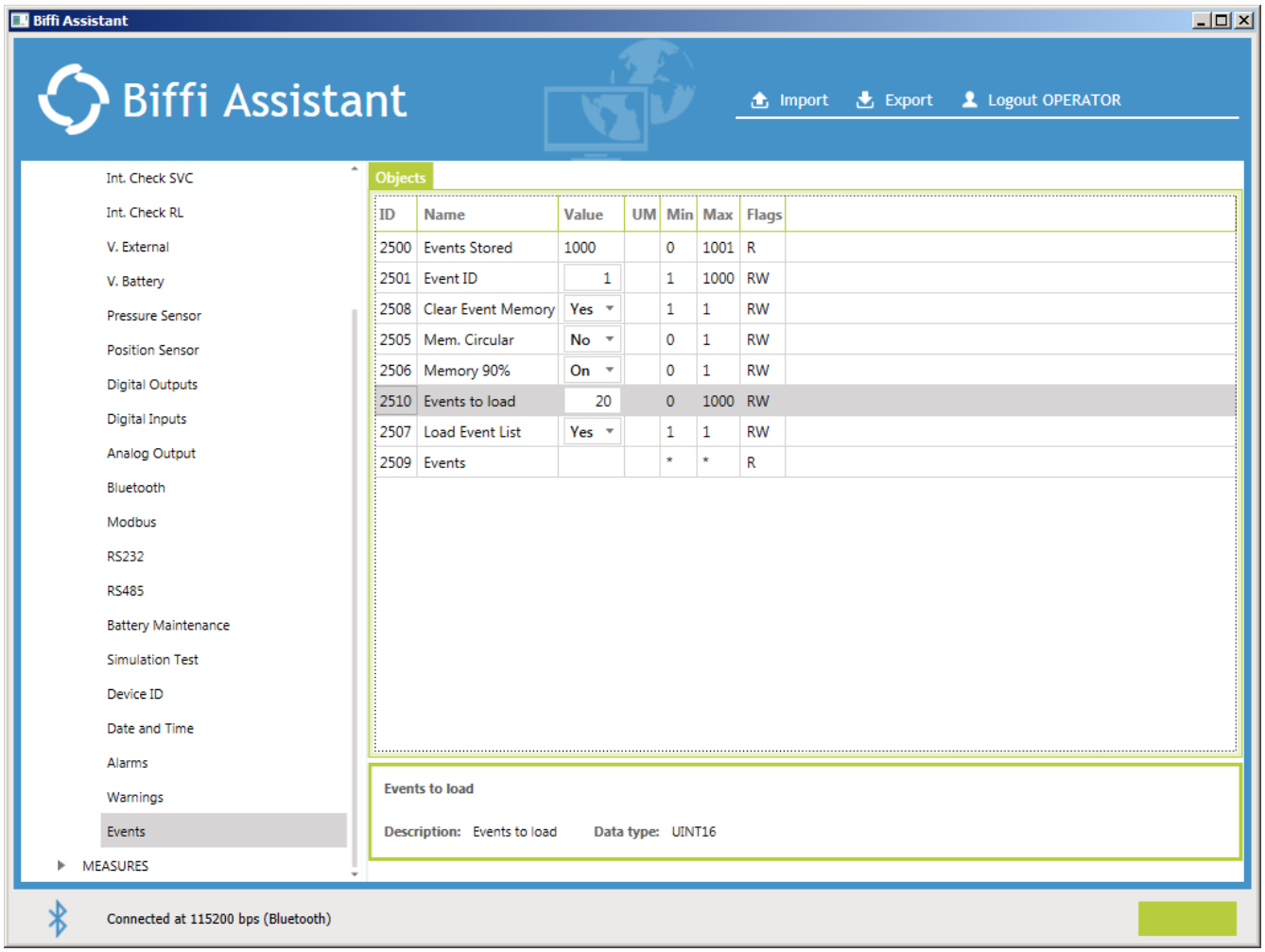
Warning

- It is recommended to use only one Serial Communication Interface (RS232, Bluetooth or RS485) per time to avoid configuration errors.
- It is mandatory to use just one of the following interfaces of the ELBS-20 per time, during the execution of the "Load Event List" command and the Export operation: RS232, Bluetooth or RS485 (see 7).
- It is mandatory not to use the Modbus interface, for reading events data, during the execution of the "Load Event List" command (see 7).

Important: The ELBS-20 automatically inhibits the using of the Local Operator Interface when one Biffi Assistant connection (RS232, Bluetooth or RS485) is active.

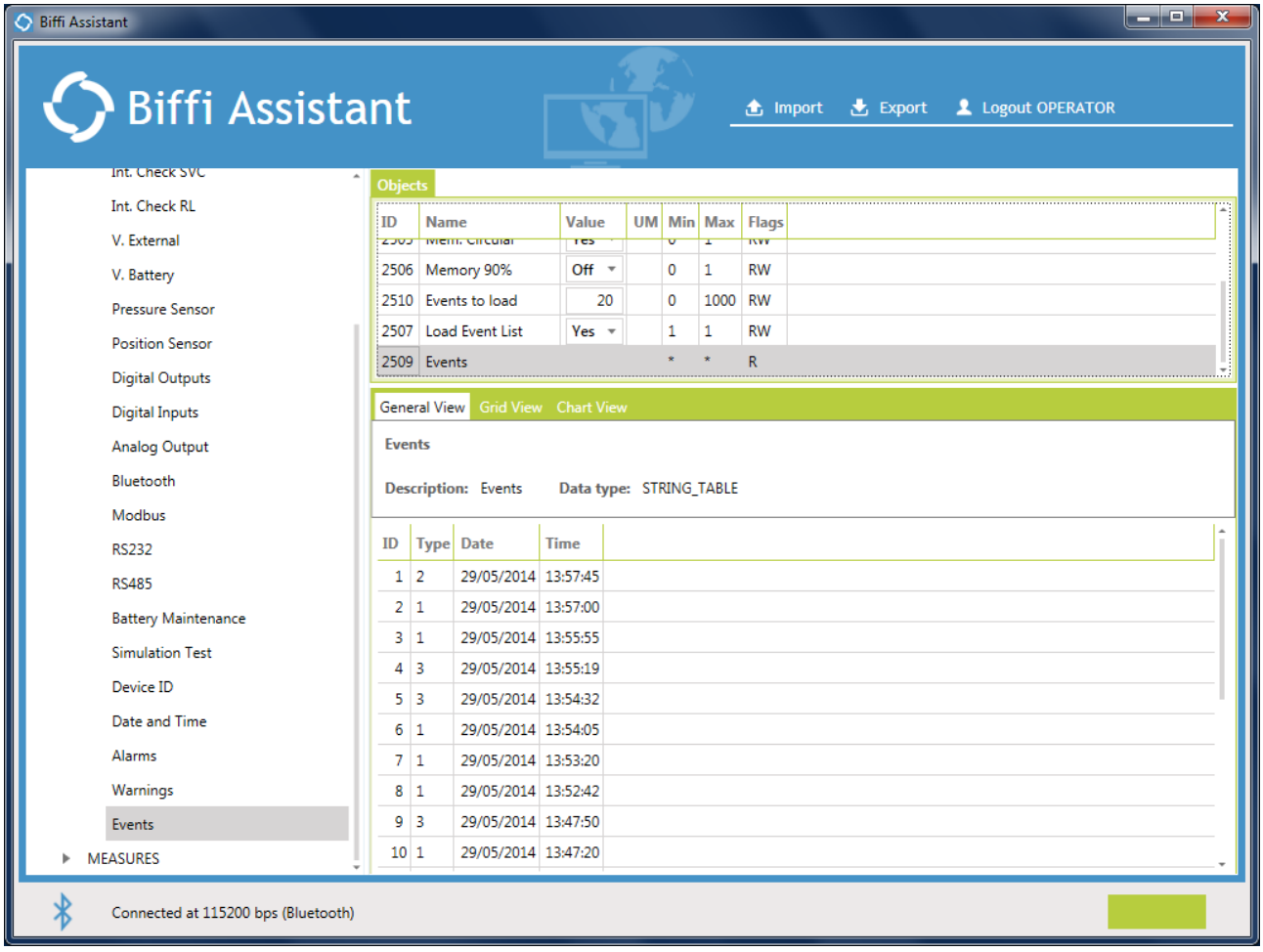
1. Verify that the ELBS-20 is in SLEEP Operating Mode (see [1]) otherwise it is not possible to load multiple events.

2. Write (see 4.3.1) the desired value (20 in the screen below) of the "Events to load" parameter (see 7).



3. Send the “Load Event List” command (see 4.4). The execution of this command can take up to an hour (for loading 1000 events).

4. Read the “Events” parameter (see 4.2.1) and the following screen appears.



Now it is possible to view the data and graph relevant to the loaded events (see 7.1.3).

It is also possible to export the data and the graph of the loaded events (see 5.2.1).
If the Export operation of the graphs is performed the data relevant to the events loaded through the “Load Event List” are exported.
The Export Operation can take up to 4 hours (RS485) and about 2 hours (Bluetooth and RS232) for exporting 1000 events.

Remember to restore the desired Operating Mode of the ELBS-20. It can be done starting from step 3.
If an export operation is performed it is suggested to restore the Operating Mode at the end of the exportation.

7.1.3 View Event Data

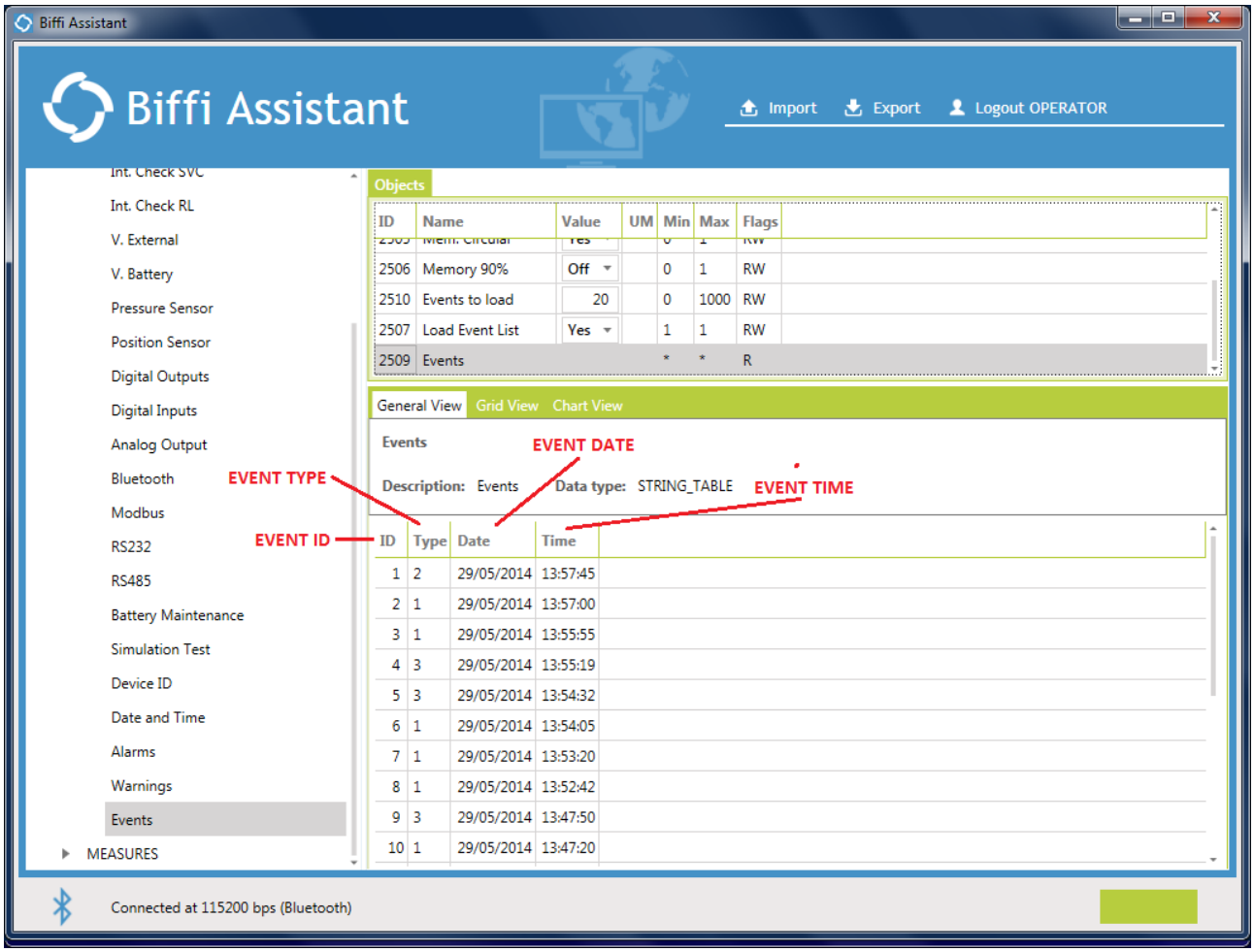
This paragraph explains how to view the data relevant to loaded events (see 7.1.1 and 7.1.2).
Particularly it is shown how to navigate into the sub-menus of the “Events” parameter.

The “Events” parameter is organized in three “Views”:

- General View
- Grid View
- Chart View

7.1.3.1 General View – Event Data

The “General View” lists all the loaded events (see 7.1.1 and 7.1.2) into a tab. Each row refers to an event and reports: “Event ID”, “Event Type”, “Event Date” and “Event Time” (see [1]).
Use the scroll bar for viewing all the loaded events.

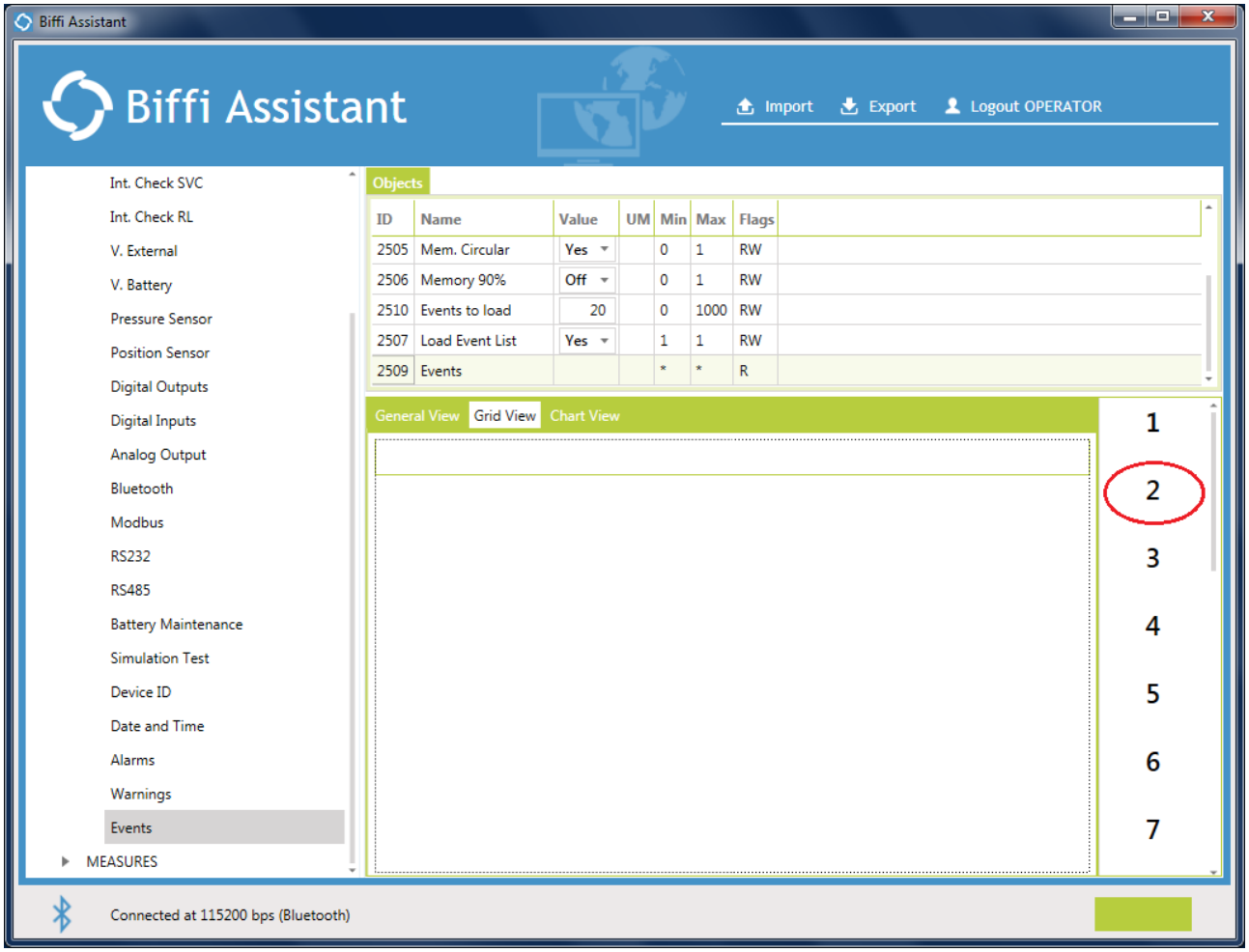


7.1.3.2 Grid View

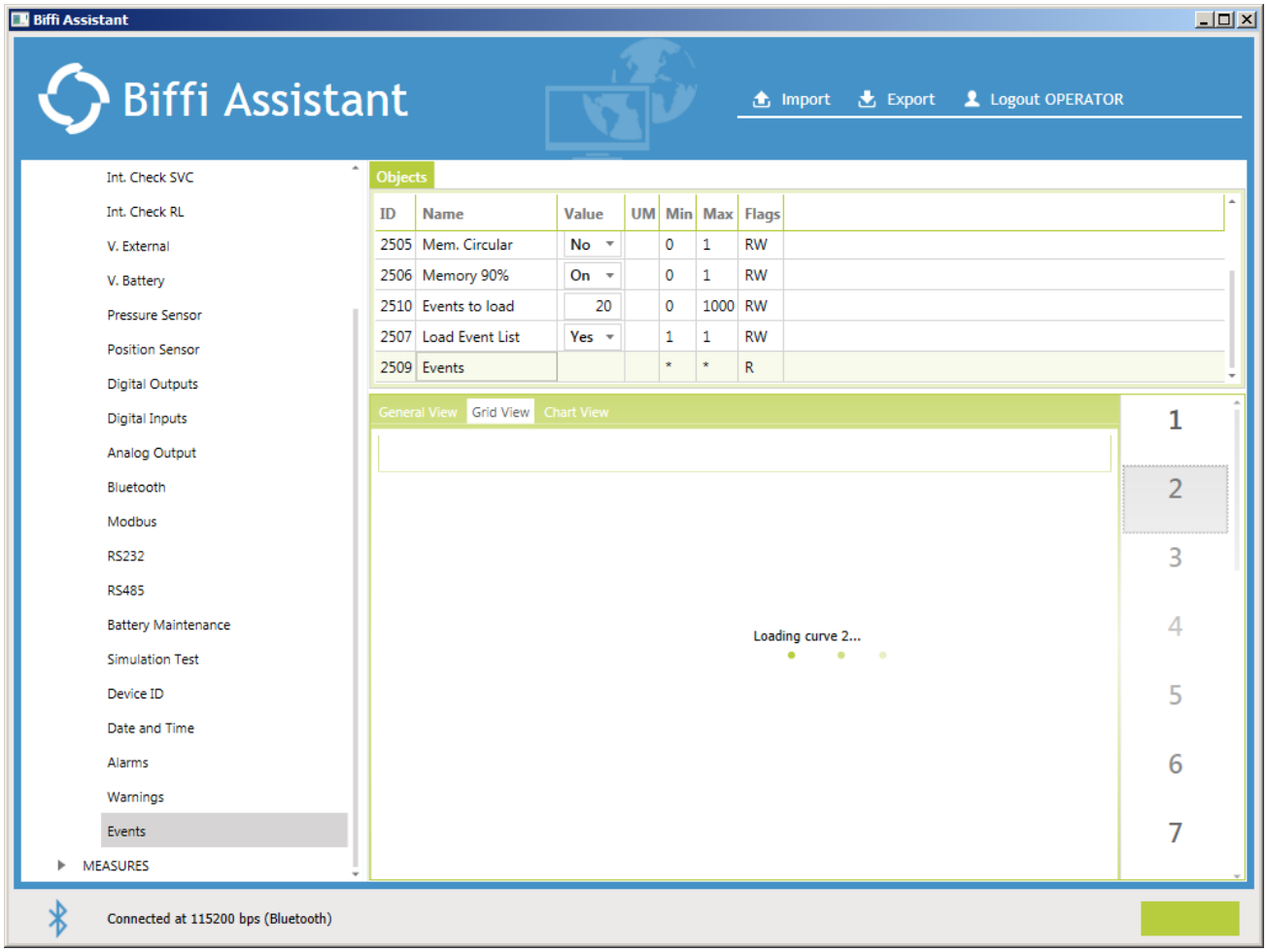
The Grid View allows displaying all the stored values (pressure and optionally position) of a single event. See [1] for details.

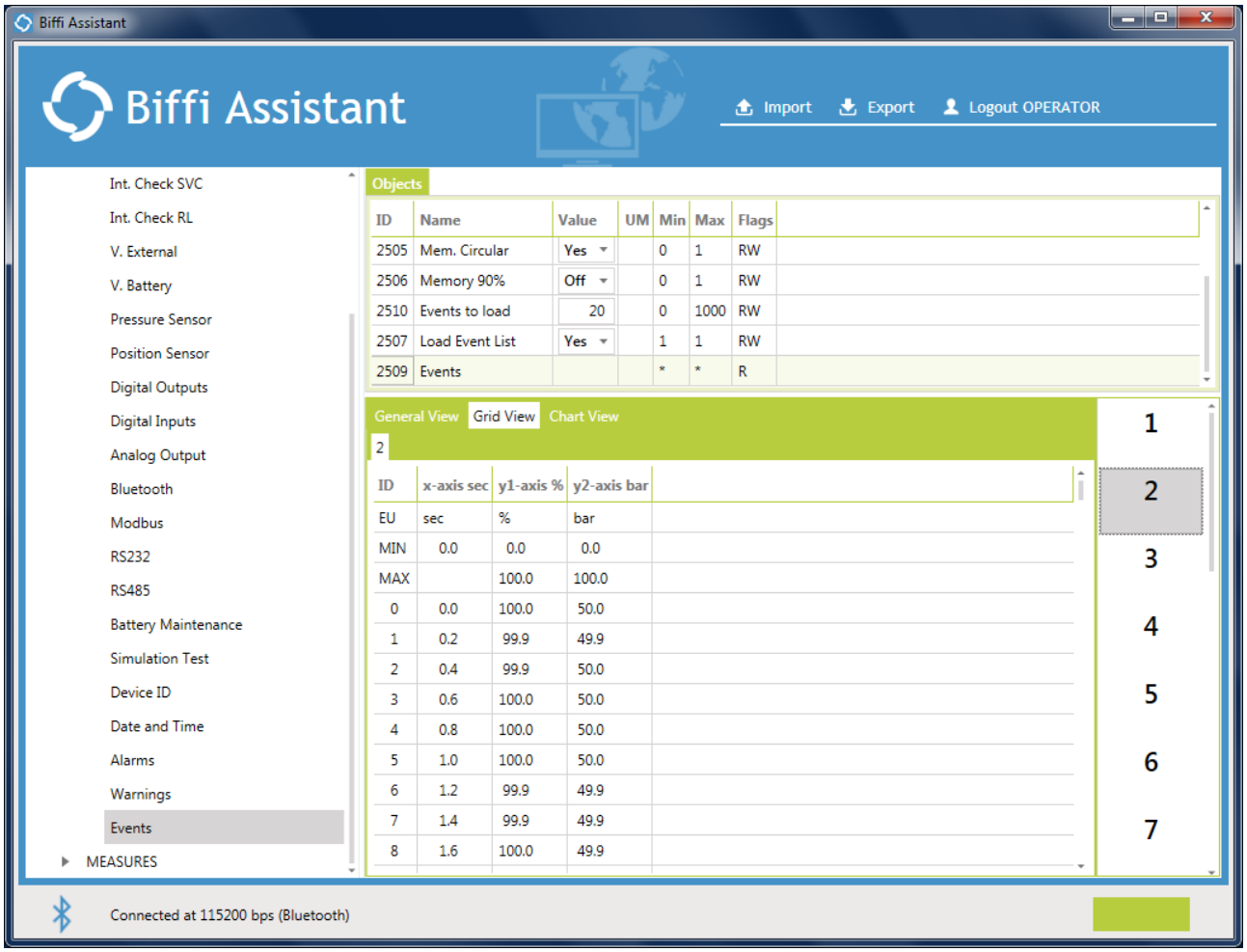
For adding an event, left-click of the mouse on the button corresponding to the Event ID of the event that has to be loaded (2 in the screen below).

Use the scroll bar for viewing all the loaded events.



Wait until the event is loaded.





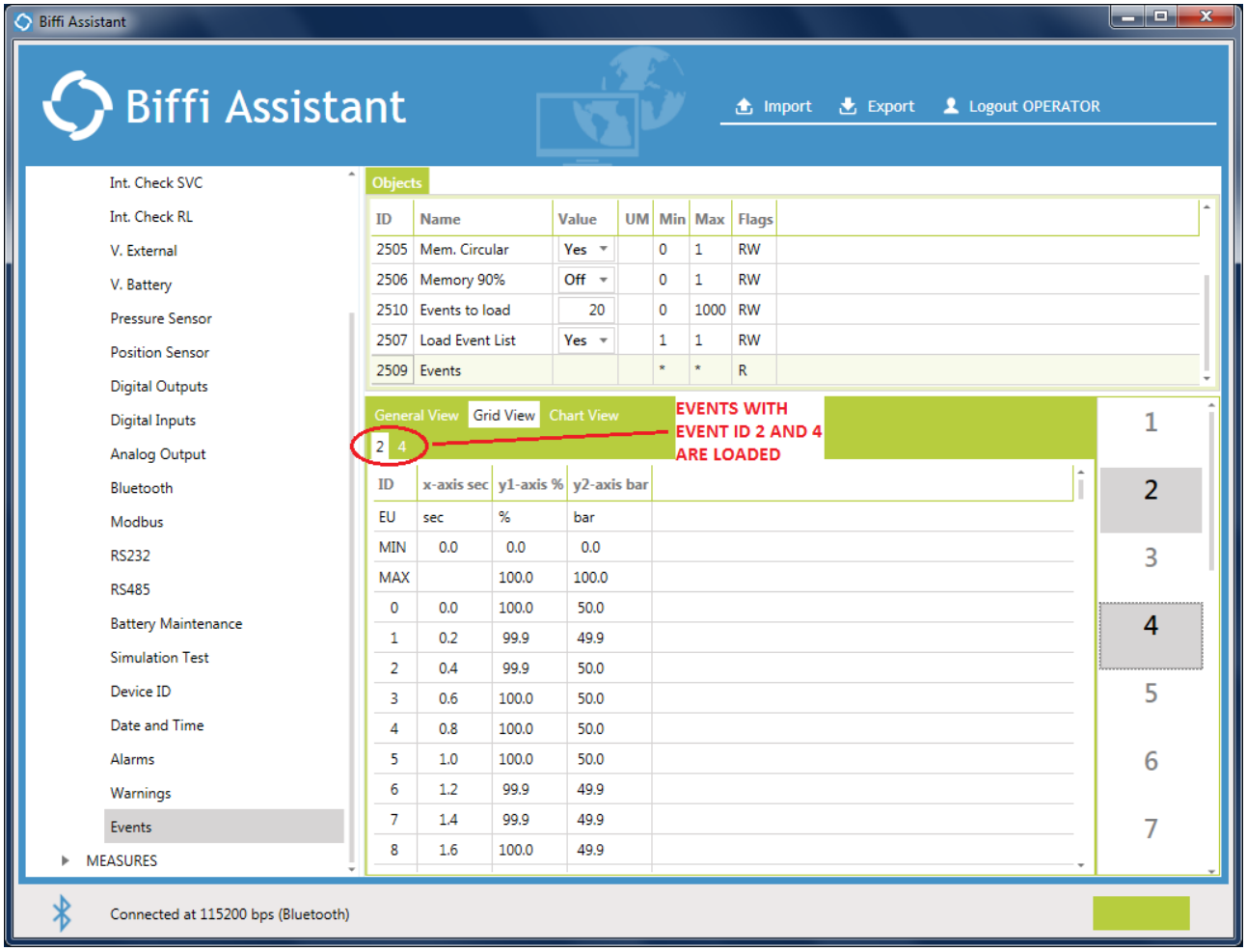
On the “ID” column, there is the progressive number of the samples of the event.
On the “x-axis sec” column, the time is reported in seconds.
On the “y1-axis %” column, the position (if the Position Sensor is enabled) is reported in %.
On the “y2-axis bar” column, the pressure is reported in bars.

The three first lines of the Tab resumes the general data relevant to the limit values of pressure and position (see [1]).

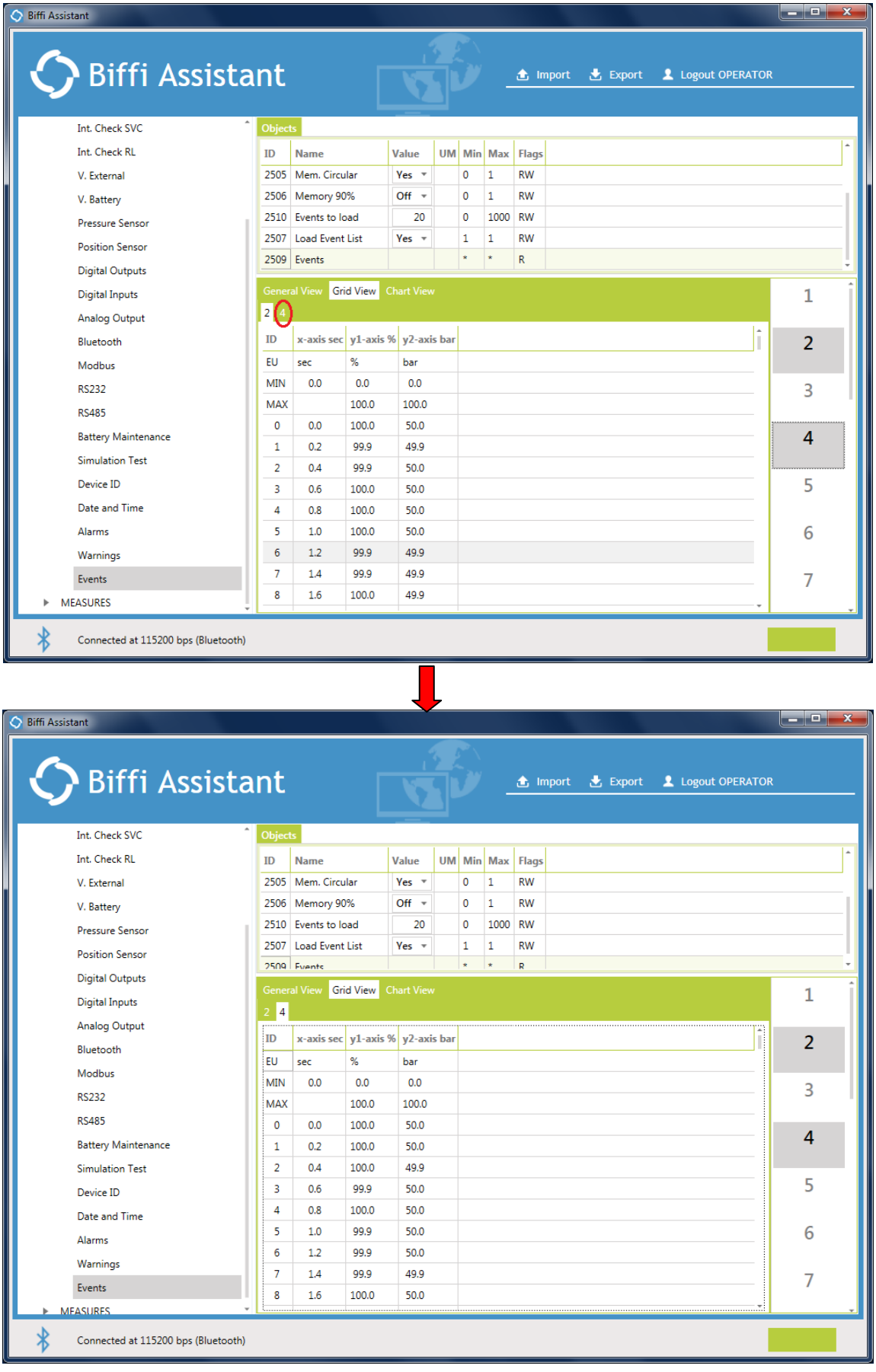
Each row reports the time and the value of on sample of pressure and position (if the Position Sensor is enabled). The time is a progressive value according to the value of the “Sampling Rate” parameter.

See [1] for additional details about the events.

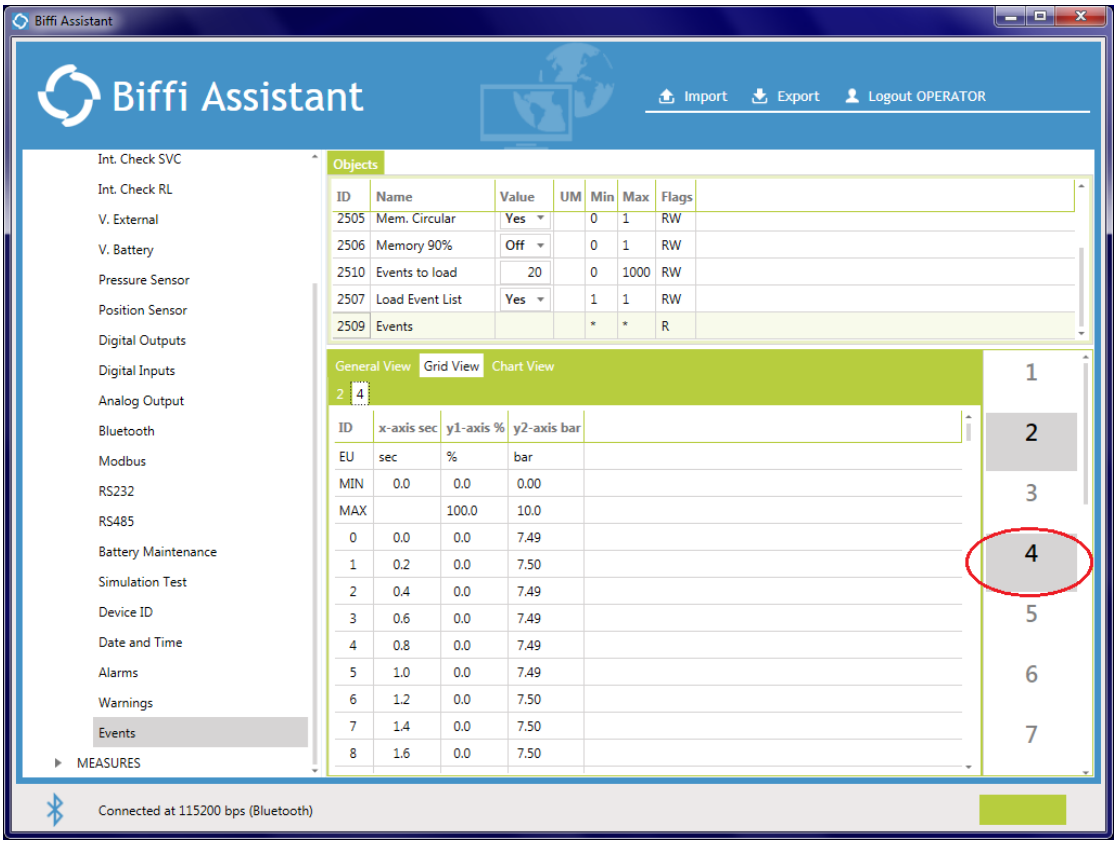
It is possible to load up to two events per time (2 and 4 in the screen below) and to view one event per time.

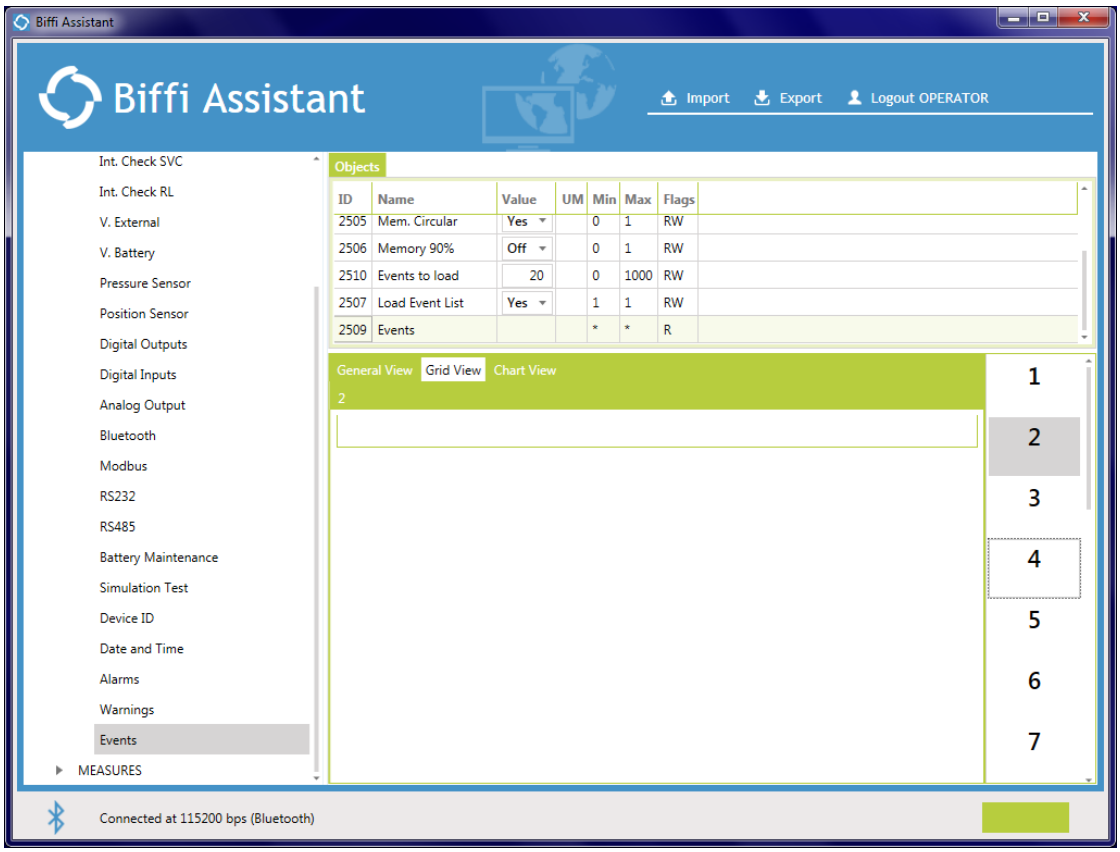


Left click of the mouse on the desired Event ID for viewing the corresponding event.



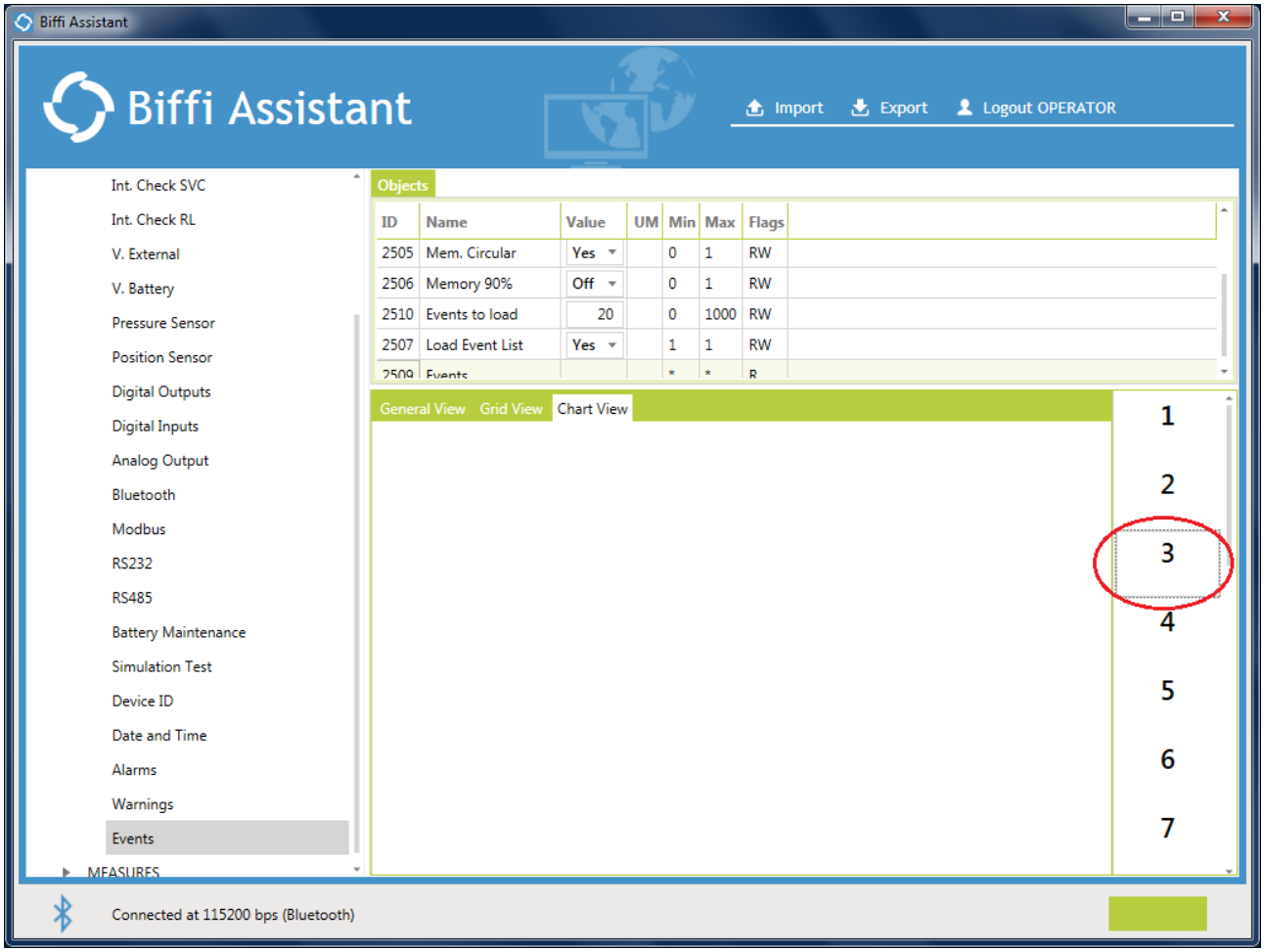
For removing a loaded event, left click of the mouse on the button corresponding to the Event ID of the event that has to be removed (4 in the screen below).



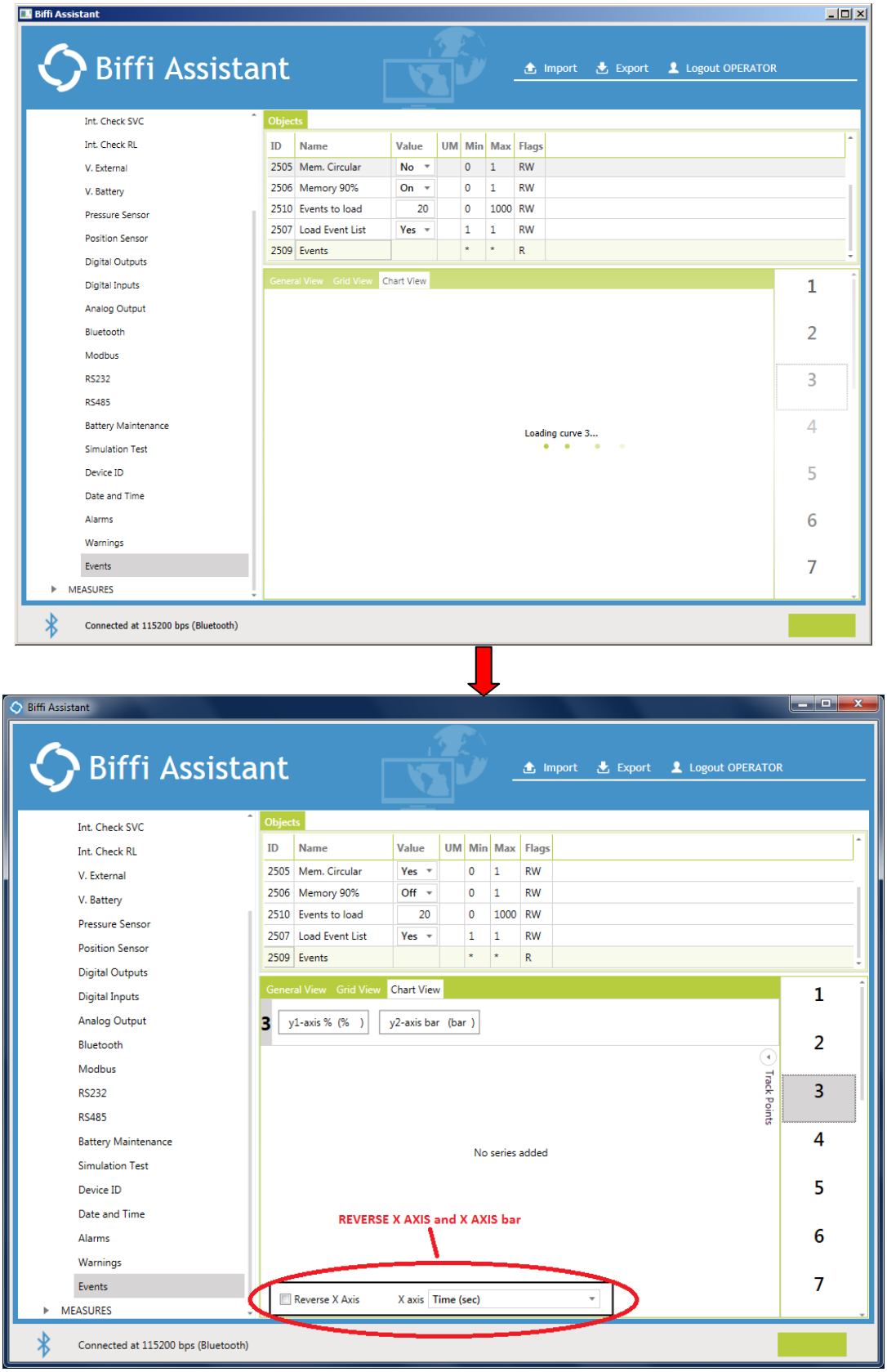


7.1.3.3 Chart View

For adding an event, left-click of the mouse on the button corresponding to the Event ID of the event that has to be loaded (3 in the screen below).

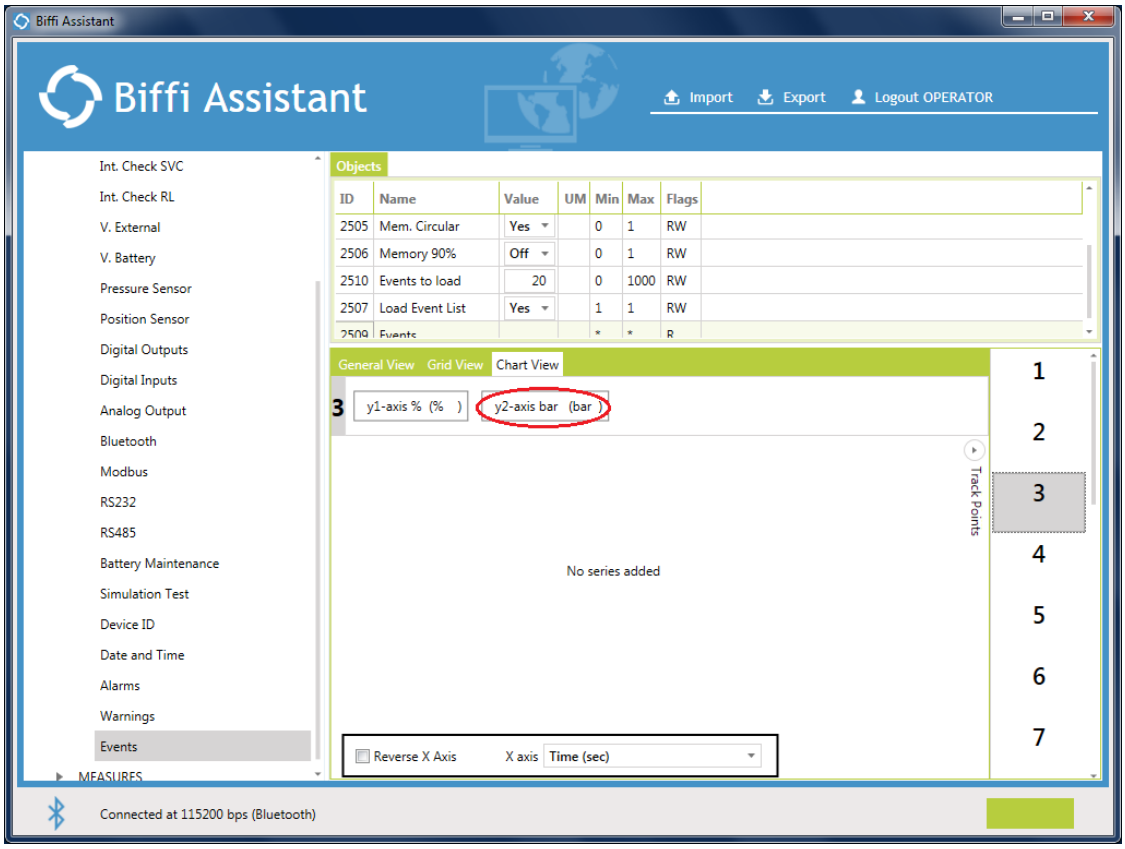


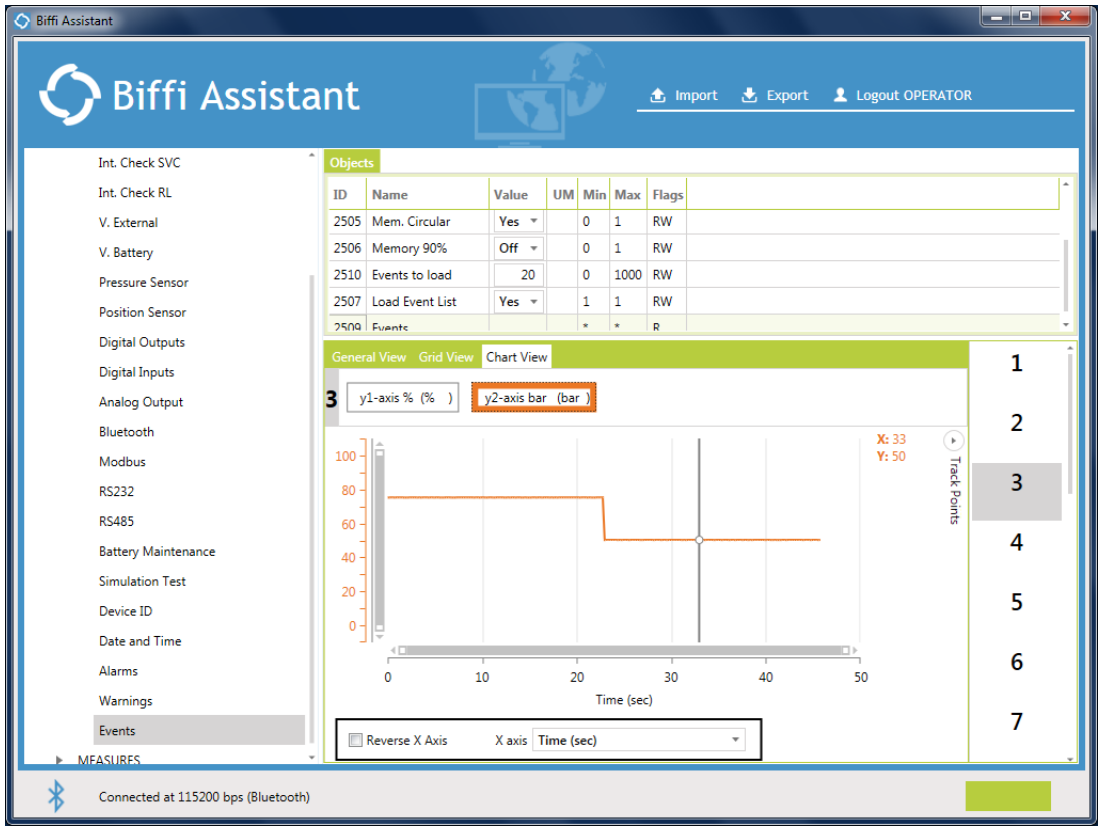
Wait until the event is loaded.



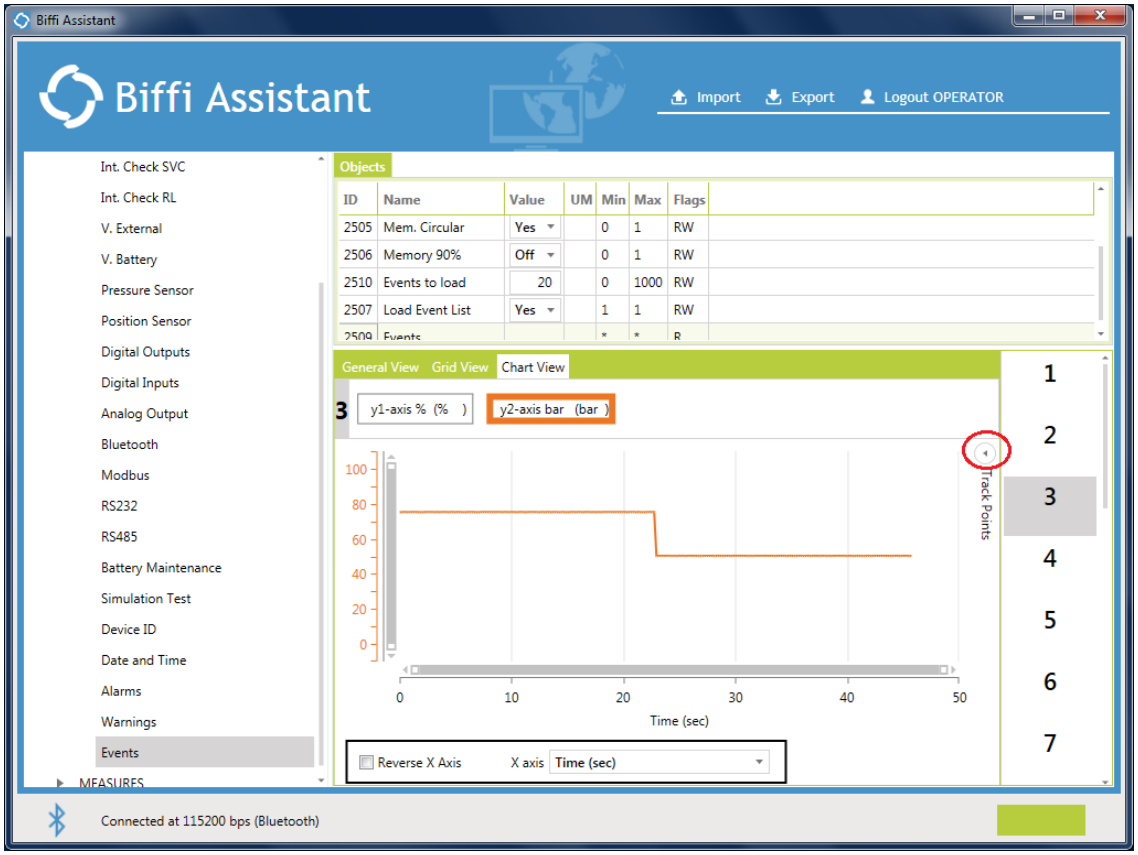
The Reverse X Axis and X axis bar must not be used.
It is suitable for other devices, not for the ELBS-20.
It is present starting from Biffi Assistant 1.03.00.00 or further versions.

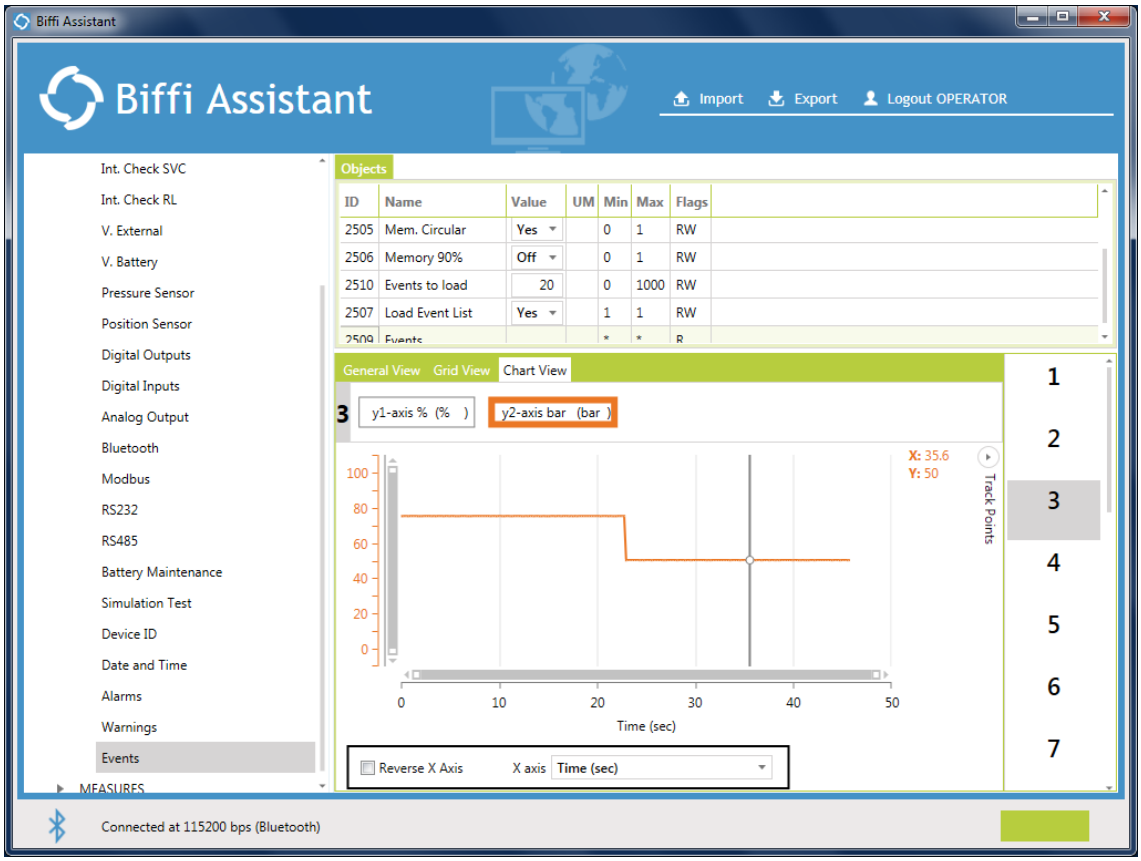
Left click of the mouse on “y2-axis bar (bar)” for loading the graph of the pressure (example below) and on “y1-axis % (%)” for loading the graph of the position (in the Position Sensor is enabled).



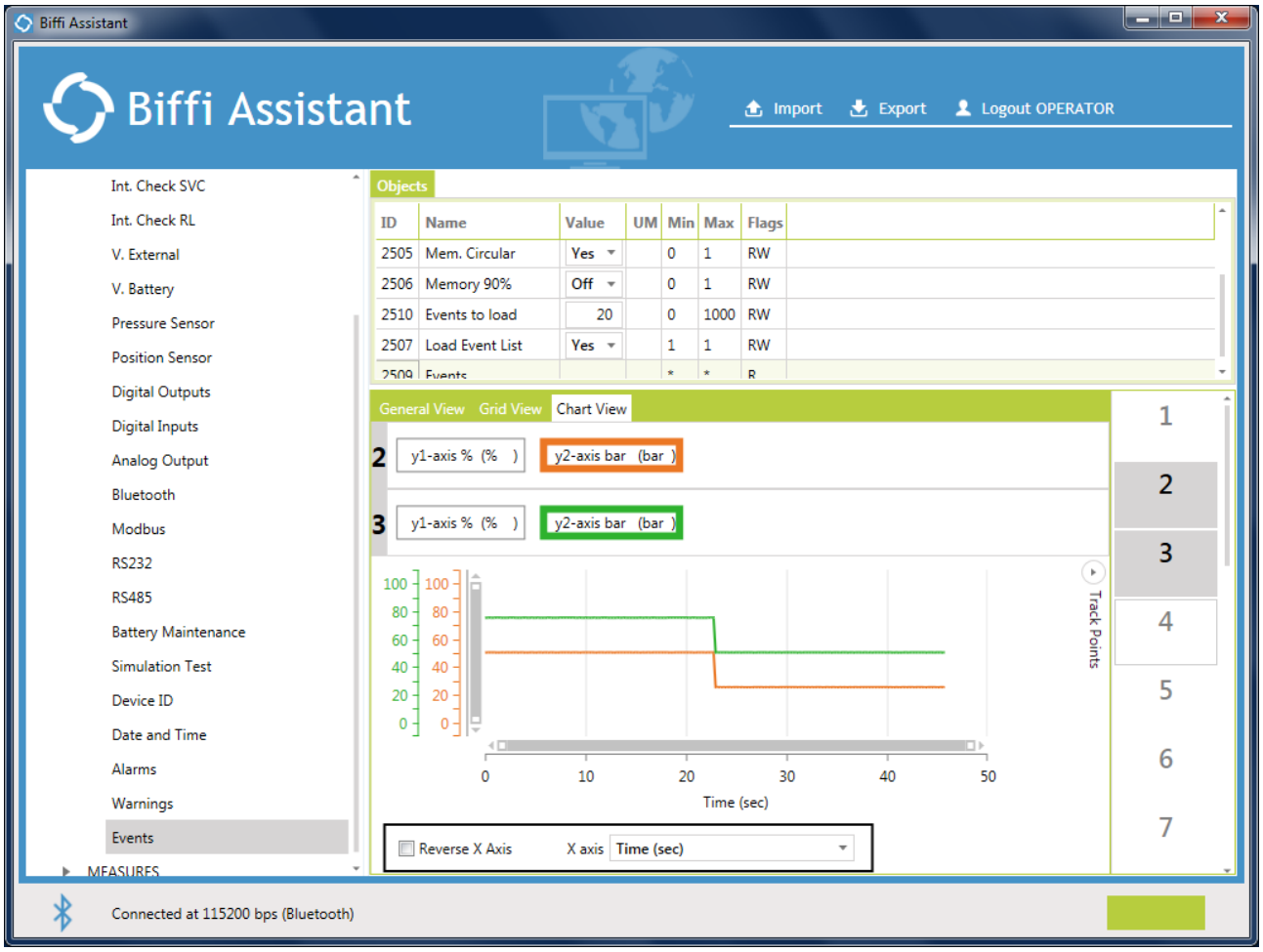


Left click of the mouse on “Track Points” to view the details of each single sample of the graph.

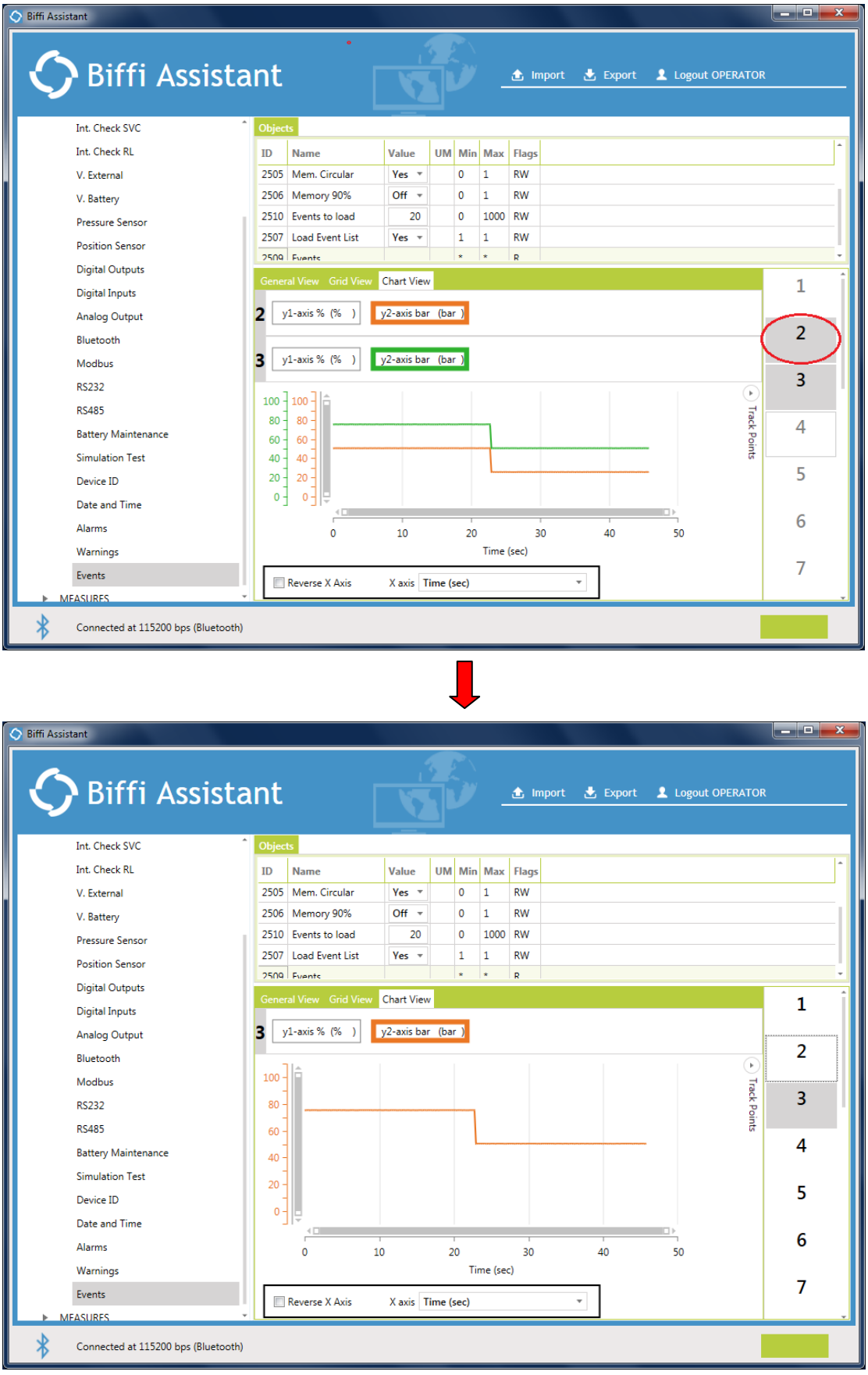




It is possible to load up to two events per time (3 and 2 in the screen below) and viewing the pressure and position graphs of the loaded events.

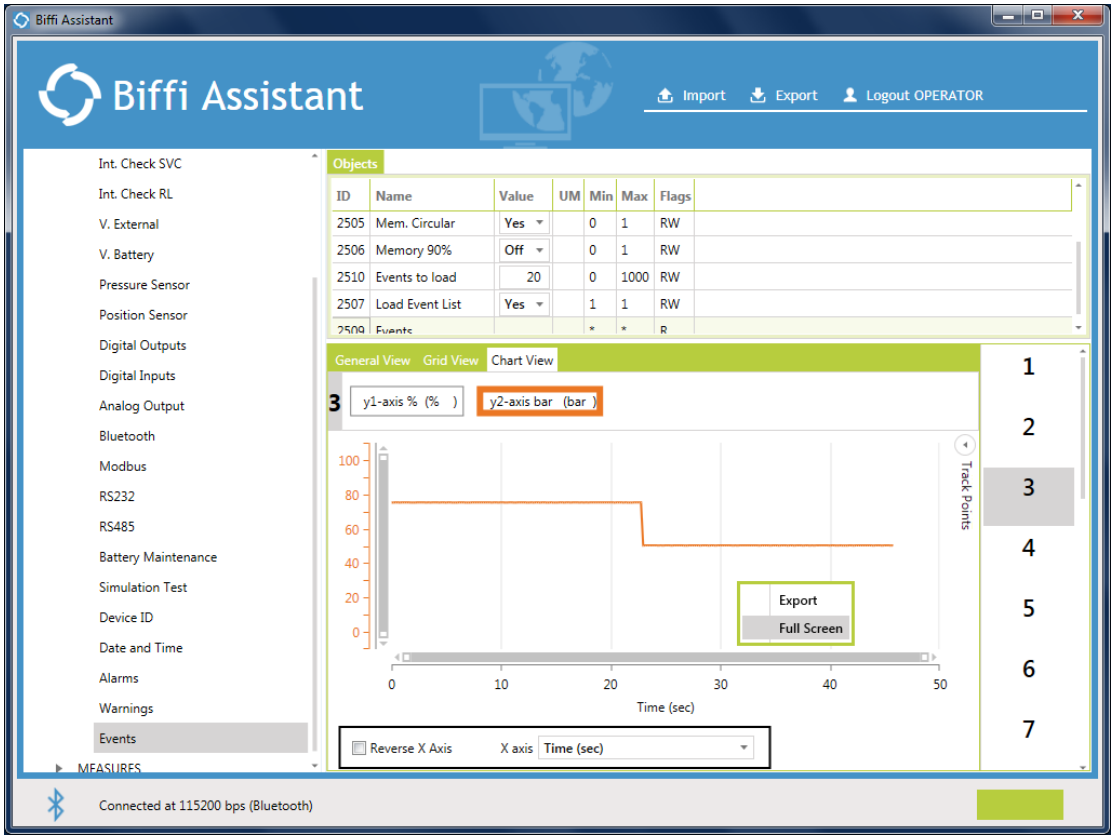


For removing a loaded event, left click of the mouse on the button corresponding to the Event ID of the event that has to be removed (2 in the screen below).

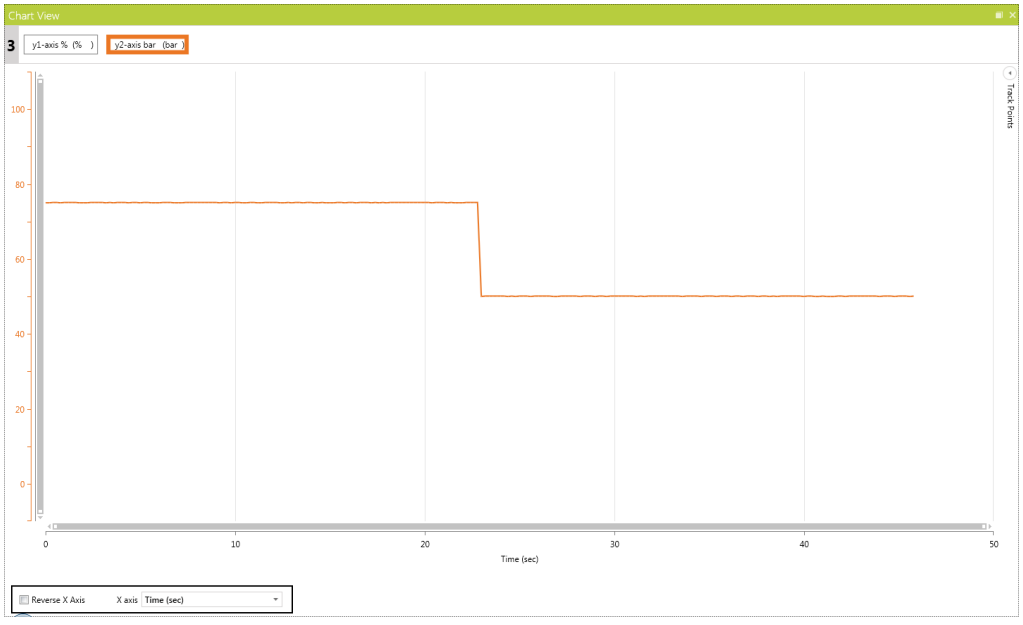


7.1.3.3.1 Chart View – Full Screen

Right click of the mouse on the opening graph and left click of the mouse on “Full Screen” for viewing the graph on the full screen.



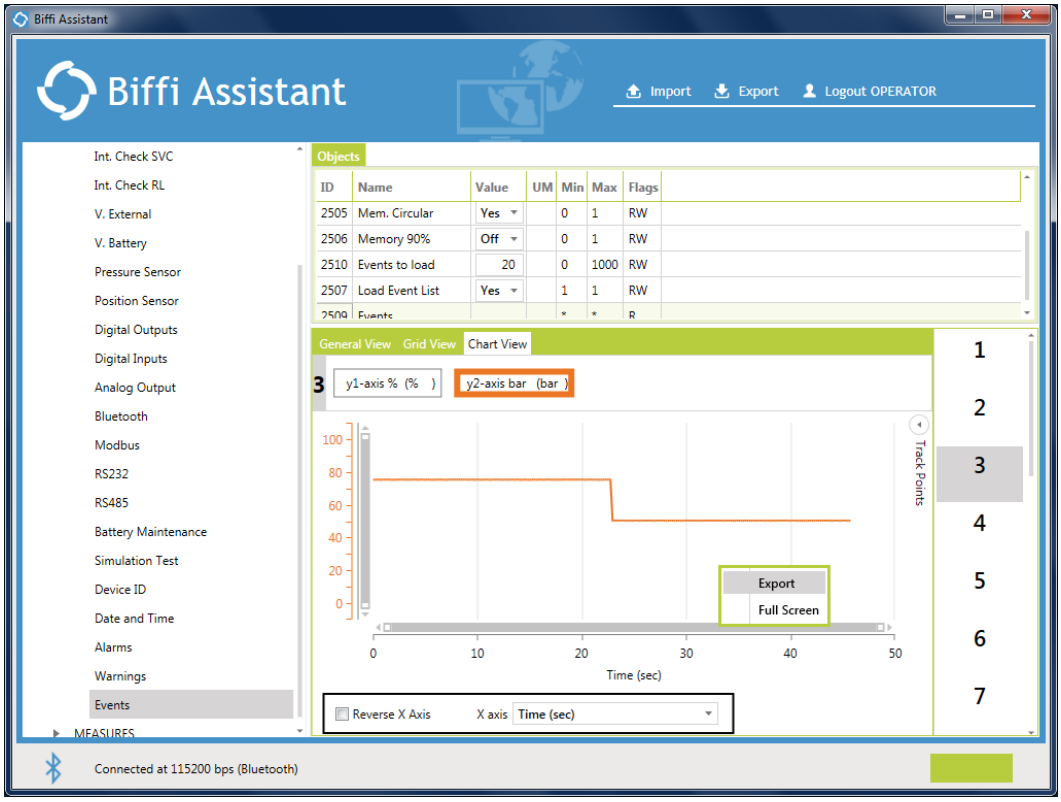
A window dedicated to the graph is opened and it is possible to apply all the options of the “Chart View” (see 7.1.3.3).



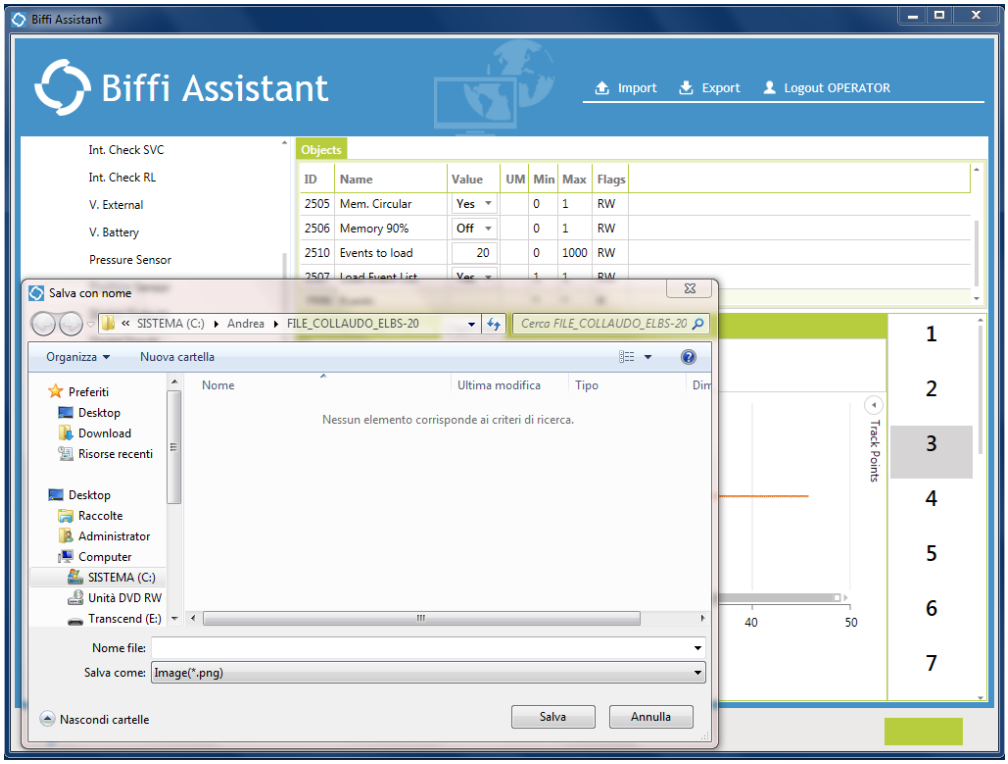
It is possible to minimize, maximize or close the window dedicated to the graph by using the buttons on right the corner on the top.

7.1.3.3.2 Chart View – Export Graph

Right click of the mouse on the opening graph and left click of the mouse on “Export” for exporting the graph into an image file (.png).



Select the File Name and the folder and then left click of the mouse on Save.

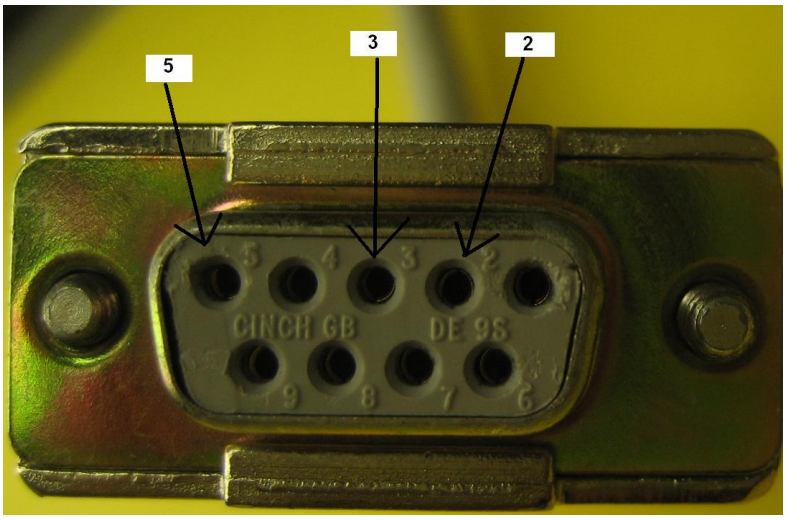


APPENDIX A – RS232 Cable

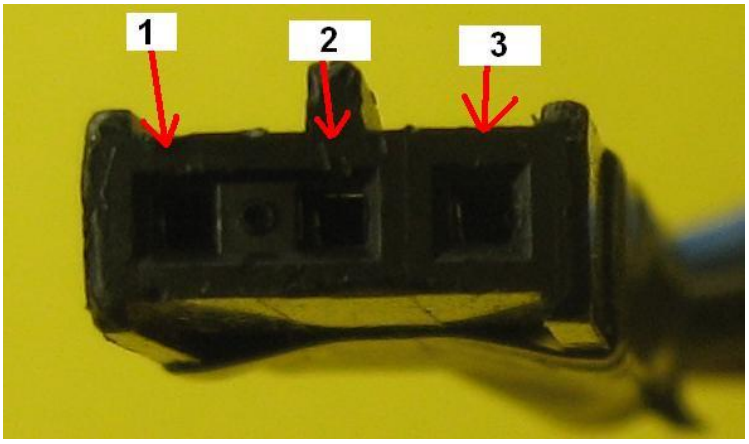
Biffi P/N: 480CABPROG

Maximum cable length: 10 meters

9 PIN D-SUB	90156-0143	PIN FUNCTION
Pin 1		
Pin 2	Pin 2	RX
Pin 3	Pin 3	TX
Pin 4		
Pin 5	Pin 1	GROUND - SHIELD
Pin 6		
Pin 7		
Pin 8		
Pin 9		



9 PIN D-SUB



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APPENDIX B – Approved Bluetooth adapters list

In this appendix is reported a list of the approved Bluetooth adapters for the Biffi Assistant software.
These adapters must use the Windows Bluetooth software and drivers (stack) included with Windows XP Professional Service Pack 2 or 3 or Windows 7 Enterprise. No driver installation is required. Here below is the list of USB/Bluetooth adapters working with Windows Bluetooth software.

USB/Bluetooth adapter	Windows XP	Windows 7
HAMLET EXAGERATE XBTUS100 2.0 cl. 1	ok	ok
BELKIN F8T017 Bluetooth Adapter cl. 1	**no ***	ok
SITECOM CN-523 USB microadapter Bluetooth 2.1version 100m	ok	ok
ATLANTIS Mobile Life mini Bluetooth 2.1 30metri, POO8-BT-038	ok	ok
KENSINGTON Bluetooth 2.1 USB Micro Adapter PN/MN:K33902 / M01011	ok	ok
DIGICOM PALLADIO USB Bluetooth EDR 100	**no ***	ok
TARGUS Mod.ACB10-US	**no ***	ok

If you have other third-party Bluetooth adapter, the required Windows drivers may not be used by the adapter and it may not be able to communicate with the Biffi Assistant. In this case it needs to install the appropriate driver supplied with the Bluetooth adapter. Refer to installation manual of driver for detailed instruction. Administrator account is required to install a new driver.
* The Bluetooth adapters indicated with "**no**" can work only after installing the appropriate driver

APPENDIX C – Biffi Assistant PC Requirements

The Biffi Assistant is tested for working with the following OS:

- Windows XP - 32bit service pack 2 or 3 and .NET Framework >= 4.0
- Windows 7 - 32bit
- Windows 7 - 64bit

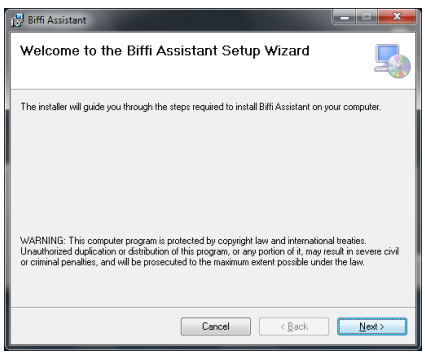
APPENDIX D – Biffi Assistant Install/Uninstall

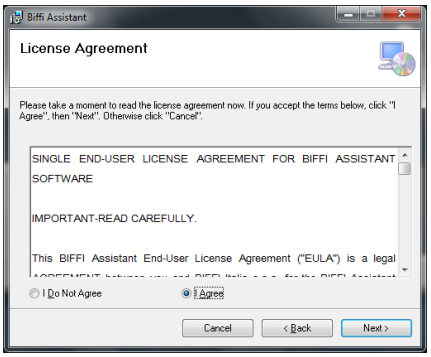
Warning: Installation can be done only by the administrator of PC

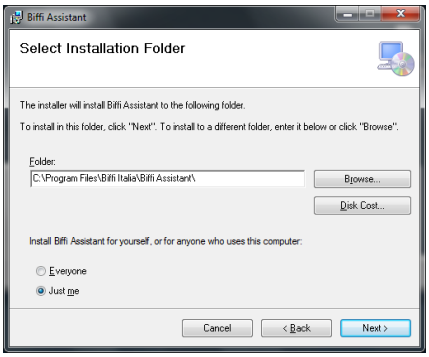
Important: "BIFFI-Assistant" for PC installation software consists of two files:
- BiffiAssistant.msi
- setup.exe

INSTALL BIFFI ASSISTANT

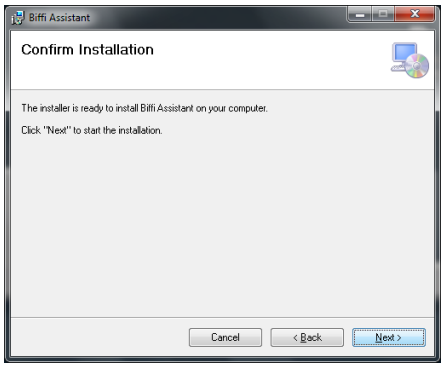
Before initiating the installation procedure of a new version of BIFFI-Assistant remove any previously installed version.
The installation process starts by a double click of the left key of mouse on "setup.exe".
A simple wizard will guide through the installation process:

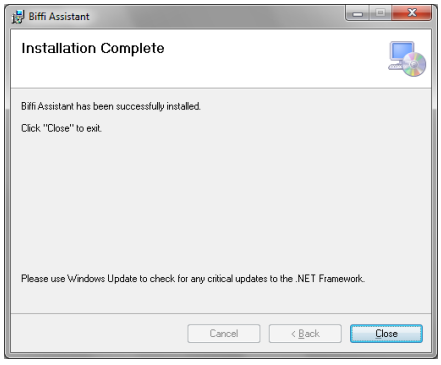






Click Next and then agree to End User License Agreement
Select installation folder and then click Next

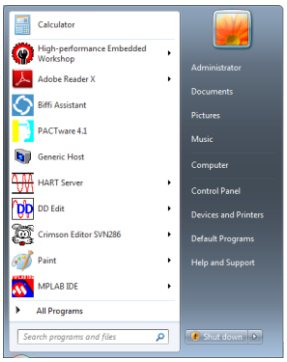


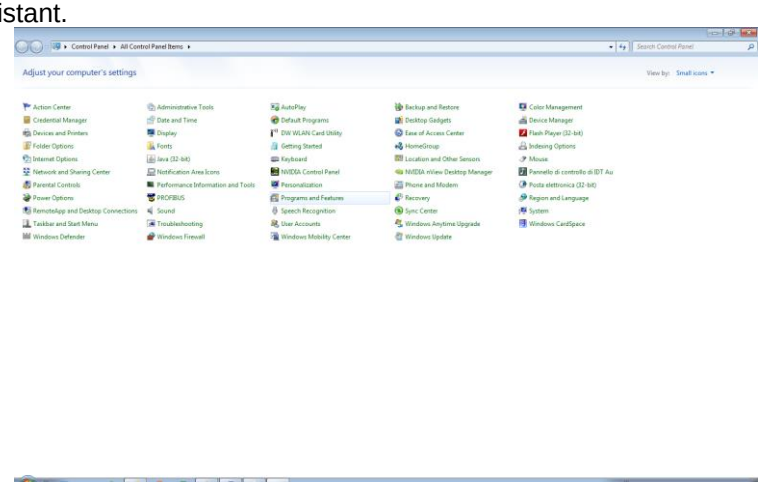


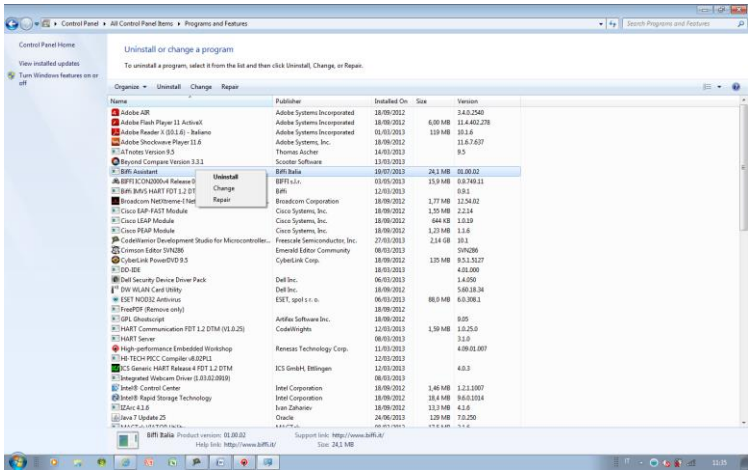
Left click of mouse on "Next" to begin the program installation
When the message "Installation complete" appears left click on Close.
An icon with BIFFI logo, named **BIFFI-Assistant** will be created on the desktop and a new program folder, named "Biffi", will be added to Start Menu\Program folder.
The program starts by a double left click of mouse.

UNINSTALL BIFFI ASSISTANT

In the taskbar click “Start”. Left click of mouse on “Control Panel” and then double left click on “Programs and Features”. Left click on BIFFI-Assistant.







Right click of mouse on Biffi Assistant. Left click on “Uninstall” and then “YES”. BIFFI-Assistant will be removed and PC is ready to re-install a new version.

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