

SOFTWARE

BLTView

Rev 2.6.3



USER MANUAL

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1 – Introduction

BLTVIEW is an application for Windows 98 or above. It communicates with the BLT160 battery testing and discharging device.

The BLT160 communicates with the PC via a USB or serial cable. This allows you to customize operation of the device by configuring the battery data and required operation.

You can also view all the operating parameters in real time and download recorded data (work cycles and graphics) to the local database on the PC.

Once downloaded onto the PC, the data can be viewed at any time without need for connection via the USB adaptor.

The *BLTVIEW* program can control the data of an unlimited number of BLT160 devices: a simple search system allows you to find and view the data of any required device.

There is a Print button that allows you to print any data displayed using the *BLTVIEW* program.

The *BLTVIEW* program also comes with a *DFU* program for updating the BLT160 firmware.

2 – Installation

The BLT160 device comes with a *BLTVIEW* installation package CD.

Initial installation

Upon initial installation:

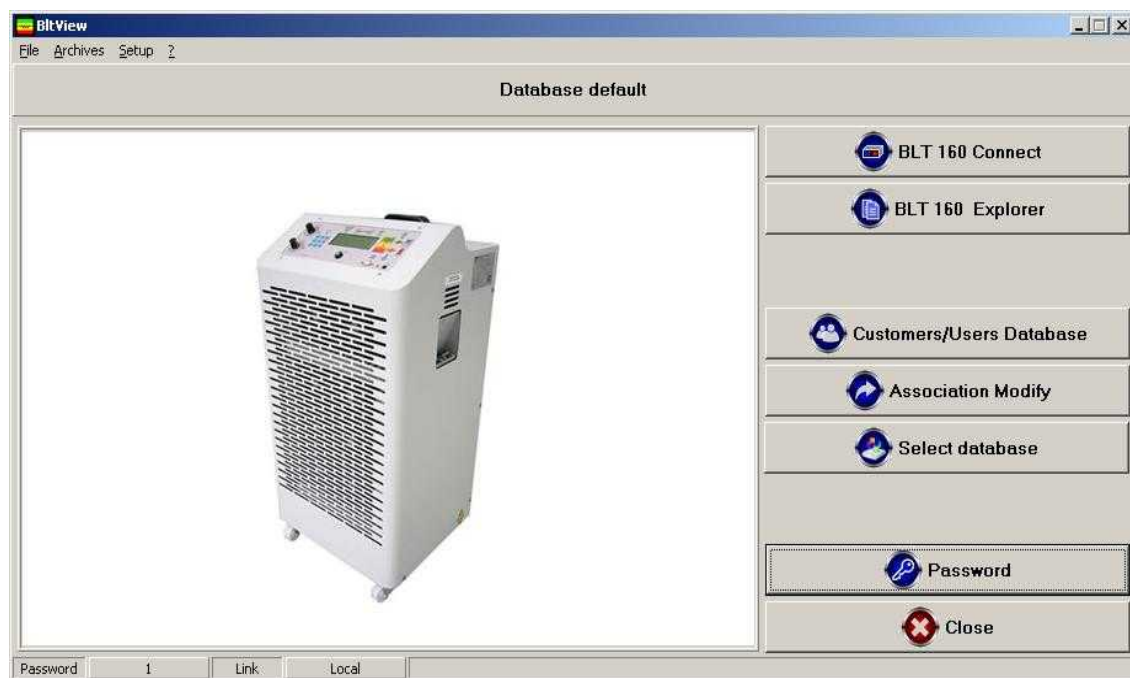
- Open the installation folder. Open the "Disk1" sub-folder.
- Start up the Setup.exe program. Follow the on-screen instructions.

When installation is complete, the *BLTVIEW* folder will appear on the program bar. The folder enables access to the content of the package. A link to the BLT160View program appears on the desktop.

Maintenance

To install an updated version of the package you first need to remove the one that you had previously installed, using the tools provided by Windows.

Once launched the program BLTVIEW has a main page where you can activate all functions.



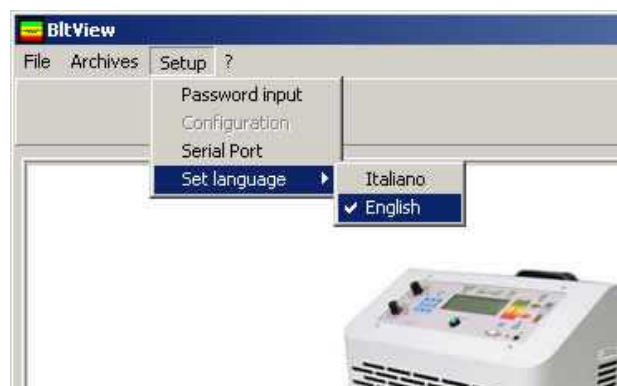
3 – Settings

You can click on the “Settings” menu to configure:

- Password access to the functions
- Passwords for the various user levels
- The serial communication port
- The software language

3.1 – Language

On the “Settings menu”, select “Set language” and select the required language



You need to restart the program to save this change

3.2 – Serial port

On the "Setup menu, select "Serial port" and open the configuration window. Select "Auto" to automatically find the serial port, or select the port yourself if already known.

NOTES:

- *The automatic search may take a few seconds at each connection due to the manner the operating system assigns the serial port number. You are advised in this case to find the port number (open the Windows Control Panel -> Device manager -> Ports (COM and LPT)) and select it.*
- *In the event the same serial port is used, it is possible to set the port number. This saves time with the automatic search.*



3.3 – Configuration

The BLTVIEW program features 3 password-protected access levels:

- No password:
 - § partial access to read-only data
 - § no access to configuration of the association parameters
 - § possibility for recording cycles and graphs on the PC
 - § no access to configuration of the programming parameters
 - § no access to the calibration parameters
- Level 1 password (user level):
 - § partial access to read-only data
 - § no access to configuration of the association parameters
 - § possibility for recording cycles and graphs on the PC
 - § partial access to configuration of the programming parameters
 - § no access to the calibration parameters
- Level 2 password (level for the technician or other authorized person):
 - § complete access to read-only data
 - § possibility for recording cycles and graphs on the PC
 - § full access to configuration of the programming parameters
 - § full access to the calibration parameters



3.4 – Password access

Select "Add password" on the "Settings" menu to change the access password.



- Select "Add password" on the "Settings" menu or press the "Password" button and enter your password.
- Select "Configuration" and open the configuration window.
- Change the password of your level or the one below

NOTES:

- The default passwords upon initial installation are:
 - § Level 1: "ALFA"
 - § Level 2: "*****" (test and calibration)
- The passwords are not "case sensitive", so it does not matter whether the characters are upper or lower case.

4 – BLT160 connected

Pictured below are the functions made available upon USB or serial cable connection to the BLT160 device. The *BLTVIEW* must already have been configured as instructed above.

4.1 – Preparation

- Connect the USB (or serial) cable to the PC and BLT160 (when you connect for the first time, you are requested to install the drivers required for USB communication¹).
- Start the *BLT160View* program.
- Enter the password, if necessary, to proceed.
- Press the connection button.

NOTE:

Serial connection is indicated by the icon in the bottom left-hand corner of each TAB.

4.2– Instant data consultation

This chapter describes all the functions made available when you connect a USB or serial cable. If the serial connection is lost, a warning message appears and the automatic services are blocked.

To reset the online functions:

- Disconnect the serial or USB cable
- Press OK when the message appears
- Reconnect the serial or USB cable
- Press the "Connect the BLT160" button to connect

There are 5 tabs at the top and 5 buttons at the bottom which differ according to the tab selected. The "BLT160 explorer" and "Download Data" buttons are available on each tab.

¹ The Windows drivers must already have been installed to enable communication via the USB port (APPENDIX B)

4.2.1 – Programming tab

This TAB enables access to the BLT160 operating parameters and to the data collection mode. The data is read-only or configurable depending on the password level.

OnLine - BLT160

Monitor | Info | Recorder | Diagram | **Program**

Nominal Parameters

Rated Voltage: 48 (Volts)
 Battery Ah: 800 (Ah)
 Modes of Operation: C+T10-N-1 Free test+Test Eff.10h
 Number of cycles: 5
 Battery ID: BAT TEST 1
 Notes:

Other Parameters

Diagram Sampling Time: 1 (Min)
 Language: ITA

Discharge

Discharge Current: 120 (A)
 Discharge Time: 10:00 (hh:mm)
 Discharge Stop Voltage: 1.70 (V/cel)
 Pause Time After Discharge: 0:30 (hh:mm)

Charge

Recharging Incr. %: 5 (%)
 Voltage Threshold: 2.40 (V/cel)
 Min. Time of Charge: 10:00 (hh:mm)
 Max. Time of Charge: 16:00 (hh:mm)
 Pause Time After Charging: 1:00 (hh:mm)

Programming modify Send data to BLT160 Set clock

Parameters Reading OK

Recorder Old Reset Recorder BLT 160 Explorer Data Download 7 Cycles 93 Diagram Close

The table lists all the fields, the devices and password required for reading and configuration.

FIELD NAME	DESCRIPTION
Nominal parameters	
Battery voltage	Nominal battery voltage
Battery Ah	Nominal battery capacity
Operating mode	Test mode (cf Technical Manual)
Nr of cycles (NC)	Number of download and upload cycles
Battery ID	Battery serial number
Notes	Notes
Discharging	
Discharge current	Discharge current during the test
Discharge time	Duration of the discharge process
End of discharge voltage	Voltage at which the discharge process is ended
End of discharge delay time	Delay time after the discharge process
Charging	
% recharging increase	Recharging increase
Threshold voltage	Battery voltage at which the 1° process moves on to the 2° process
Minimum charging time	Minimum duration of the charging process
Maximum charging time	Maximum duration of the charging process
Delay after charging	Delay after the charging process
Other parameters	
Graph sampling time	Time for sampling the recorded voltage and current graphs
Languages	Language selection

When you program the VCOST work mode, two parameters differ according to the situation in which they are used (both online and offline):

End of charge voltage (V/el):

Voltage control (V)	Constant voltage of reference
---------------------	-------------------------------

Discharge current (A):

Max discharge current (A)	Limit discharge current during the test
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4.2.1.1 - Time configuration

To configure the BLT160C device's date clock, simply press the "Set clock" button.

Check the time and date on the PC are correct beforehand

4.2.1.2 – Programming the main parameters

Make sure you enter the password for at least the Level 1 user.

Press "Re-programming".

To transfer the re-programmed parameters, simply press "Transfer data to BLT160".

Pressing "Cancel" freezes the fields and resets the previous data on the BLT160.

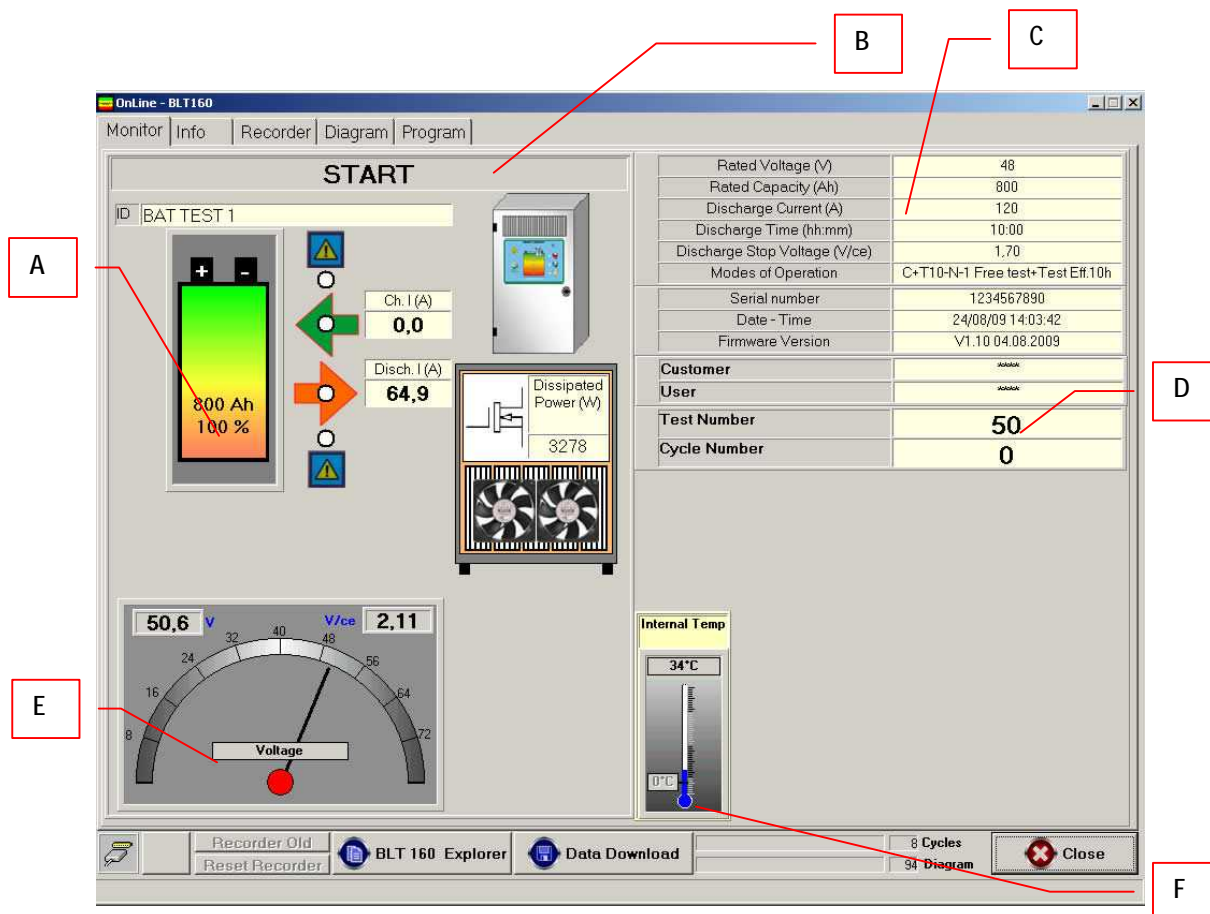
4.2.2 – TAB Monitor

The TAB Monitor indicates the battery's main status and operating parameters in real time.

These are the sections:

- A: Battery capacity level
- B: Discharging/charging information
- C: Nominal parameters programmed on the device
- D: Number of the test and cycle in progress
- E: Battery voltage
- F: Temperature of the BLT160

The meaning of the various fields is self-explanatory.



- Ø The "BLT160 Explorer" button allows you to valuate data offline (see chap.5) and therefore read the data saved in the database.
- Ø The "Data download" button allows you to read the data recorded on the BLT160 and save it in the database on the PC (see § 4.2.7).
- Ø The "Close" button takes you back to the main page and closes the online session.

4.2.3 – TAB Info

TAB Info indicates the test's detailed status and operating parameters in real time.

These are the sections:

- A: Test number
- B: Test cycle number
- C: Nominal parameters
- D: Discharging data
- E: Charging data
- F: List of current faults

The screenshot shows the 'OnLine - BLT160' software window with the 'Info' tab selected. The interface is divided into several sections:

- Test Information:** Test Number 71, Cycle Number 12.
- Nominal Parameters (C):**

Rated Voltage (V)	48
Rated Capacity (Ah)	800
Discharge Current (A)	80
Discharge Time (hh:mm)	0:08
Discharge Stop Voltage (V/cv)	1.85
Modes of Operation	CYCL-Free Cycles
Firmware Version	Vb142 26.08.2009
- Discharge Data (D):**

Discharge Start	28/08/09 14:19
Discharge Time	0:06 (hh:mm)
Pause Time After Discharge	0:02 (hh:mm)
Capacity at Cycle Start	504 (Ah) 63.0 (%)
Discharge Capacity	17 (Ah) 2.1 (%)
Capacity at Discharge End	493 (Ah) 61.6 (%)
Efficiency	*** (%)
Minimum Voltage	2.11 (V/cv)
Maximum Temp. on Electronic Card	35 (oC)
- Charge data (E):**

Start Of Charging	28/08/09 14:29
Stages Time	1st: 0:05 2nd: 0:00 (hh:mm)
Total Charging Time	0:05 (hh:mm)
Pause Time After Charging	0:00 (hh:mm)
Capacity at the Start of Charging	493 (Ah) 61.6 (%)
Capacity charged in 1st Phase	0 (Ah) 0.0 (%)
Capacity charged in 2nd Phase	0 (Ah) 0.0 (%)
Total Input Capacity	0 (Ah) 0.0 (%)
Recharging Incr. %	1 (%)
Capacity at End of Charging	487 (Ah) 60.9 (%)
Maximum Voltage	2.12 (V/cv)
Maximum Current	0.0 (A) Ahnom/A
Current at the End of Charging	0.0 (A) Ahnom/A
- Active Anomalies List (F):** A list of current faults, currently empty.

At the bottom, there is a toolbar with buttons: Recorder Old, Reset Recorder, BLT 160 Explorer, Data Download, a progress bar showing 11 Cycles and 3 Diagrams, and a Close button.

- Ø The Print button allows you to print the data displayed on the screen.
- Ø The "BLT160 Explorer" button allows you to valuate data offline (see chap.5).
- Ø The "Data download" button allows you to read the data recorded on the BLT160 (see § 4.2.7).
- Ø The "Close" button takes you back to the main page and closes the online session.

The various fields are listed in the table.

FIELD NAME	DESCRIPTION
Test number	Number of the test in progress
Cycle number	Number of the cycle in progress
Programmed values	
Notes	Notes entered on the Programming page
BAT ID	Battery serial number as configured on the Programming page
Nominal voltage	Nominal battery voltage
Nominal capacity	Nominal battery capacity
Discharge current	Discharge current
Discharge time	Time required for discharge
End of discharge time (V/el)	Time at the end of which the discharge process is ended
Operating mode	Test mode (cf Technical Manual)
Firmware version	Version of the BLT160 firmware
Discharge data	
Discharge start	Time and date discharge is started
Discharge time	Overall time for all the discharge processes (discharge current > 0)
End of discharge delay time	Overall delay time after discharge
Start of cycle capacity	Battery capacity at start of the discharge process
Overall discharged capacity	Overall battery capacity discharged
End of discharge capacity	Residual battery capacity in the battery after the discharge process
Efficiency	Battery efficiency given as a percentage
Minimum voltage (discharge)	Minimum voltage during the discharge process
Max internal temperature of the electronics	Temperature of the electronics
Charging data	
Charge start	Time and date charge is started
Process duration (1^)	Overall time of the charge processes (charge current > 0) with battery voltage < "Threshold voltage" (cf programming)
Process duration (2^)	Overall time of the charge processes (charge current > 0) with battery voltage ≥ "Threshold voltage" (cf programming)
Overall charge time	Overall time of all the charge processes (charge current > 0)
End of charge delay time	Overall delay time after charge
Start of cycle capacity	Battery capacity at start of the recharge process
Charge capacity 1st Process	Overall capacity charged during the charge processes (charge current > 0) with battery voltage < "Threshold voltage" (cf programming)
Charge capacity 2st Process	Overall capacity charged during the charge processes (charge current > 0) with battery voltage ≥ "Threshold voltage" (cf programming)
Overall charged capacity	Overall capacity charged during the charge processes (charge current > 0)
Recharging increase	Increase in percentage between charged capacity and reintegrated capacity
End of charge capacity	Battery capacity at the end of the recharging process
Max voltage (charge)	Max voltage during the recharging process
Max current (charge)	Max charge current
End of charge current	Charge current a moment before ending the recharging process

4.2.3.1 List of faults

Refer to the BLT160 Technical Manual

4.2.5 – Graph TAB

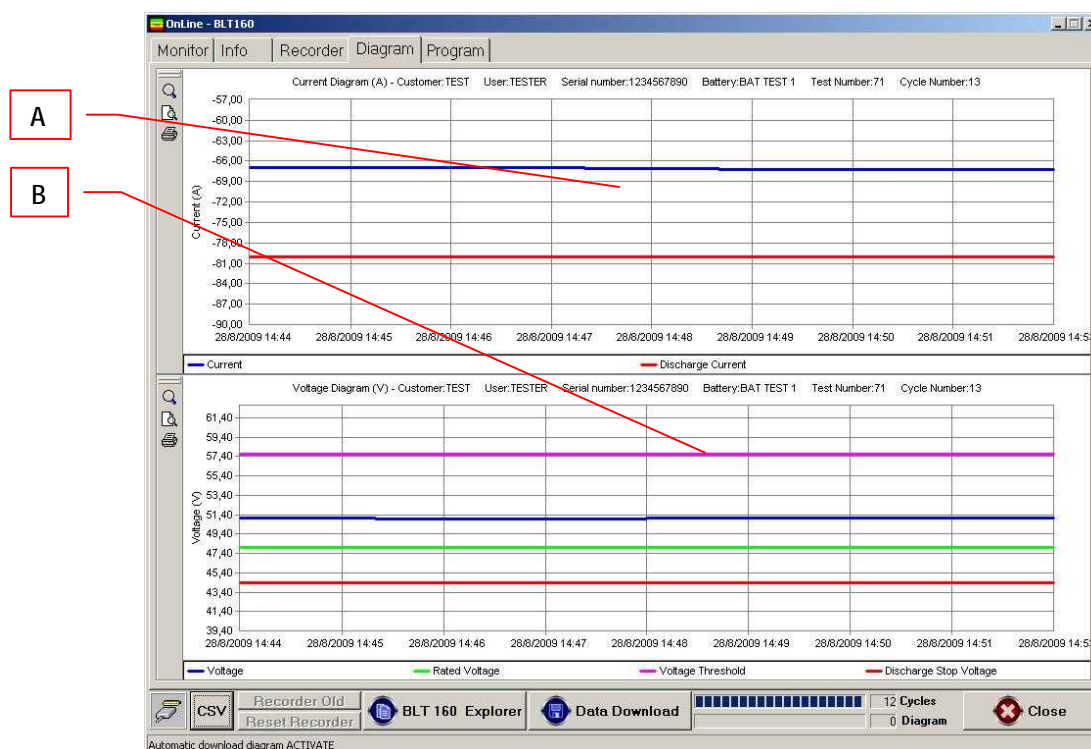
The Graph TAB allows you to view current and voltage progress graphs for the cycle in progress. The PC reads the graphs automatically.

The graphs are updated with new data every ten seconds at the most.

The max capacity of the graphs depends on the device connected. Consult the BLT160 technical manual.

There are these sections:

- A: Current graph for the selected cycle.
- B: Voltage graph for the selected cycle.



- Ø There are three specific buttons for each of the two graphs:
 - Magnifying glass: allows you to select and enlarge an area of the graph.
 - Blank sheet with magnifying glass: for a print preview of the information on the screen.
 - Printer: to print out the information on the screen.
- Ø The "CSV" button allows you to download current and voltage data in the form of a text file with defined fields (*.csv). The file is given a set name which you can change.
- Ø The "BLT160 Explorer" button allows you to valuate data offline (see chap.5.1).
- Ø The "Data download" button allows you to read the data recorded on the BLT160 (see § 4.2.7).
- Ø The "Close" button takes you back to the main page and closes the online session.

4.2.6 –Recorder TAB

This window allows you to view current and voltage progress graphs when online, regardless of test and cycle number.

The measurements are:

- Charge (+) or discharge (-) current
- Programmed nominal discharge current (-)
- Battery voltage
- Programmed nominal discharge voltage
- Programmed charge threshold voltage
- Programmed discharge stop voltage

The records are updated, on average, every six seconds.

The graph can represent up to 54000 samples, the equivalent of 90 hours.

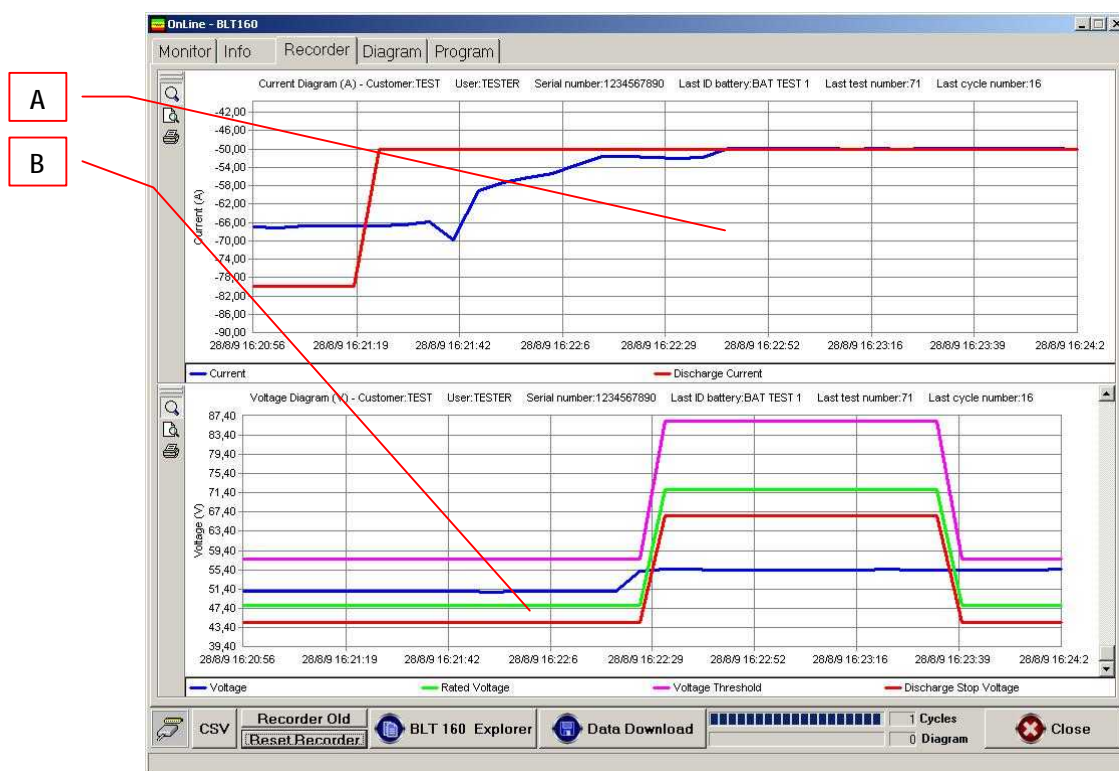
The N.54001 sample overwrites sample N.1.

If you leave a session and then return to it some time later, you will notice new data has been added.

To re-start the graph from “zero”, reset it manually by pressing the “Reset Recorder” button at the bottom. The previous data is not cancelled but is registered in a file with a predetermined name which you will then be able to consult by pressing the “Recorder Old” button or the “Archivi-Recorder Old” menu in the main window (see § 5.5).

There are these sections:

- A: Current graph
- B: Voltage graph



- There are three specific buttons for each of the two graphs:

- Magnifying glass: allows you to select and enlarge an area of the graph.
- Blank sheet with magnifying glass: for print preview of the information on the screen.
- Printer: to print out the information on the screen.
- Ø The "CSV" button allows you to download current and voltage data in the form of a text file with defined fields (*.csv). The file is given a set name which you can change.
- Ø The "Recorder Old" button allows you to re-read the registered data in dedicated files (see § 5.5).
- Ø The "Reset Recorder" button allows you to register a new recorder and store the data in a dedicated file.
- Ø The "BLT160 Explorer" button allows you to valuate data offline (see chap.5.1).
- Ø The "Data download" button allows you to read the data recorded on the BLT160 (see § 4.2.7).
- Ø The "Close" button takes you back to the main page and closes the online session.

4.2.7 – Download

Pressing the "DATA DOWNLOAD" button opens the window for selecting the CLIENT for whom the test was run and the OPERATOR who executed the same test.

These fields are mandatory for purposes of searching previous records.

After selecting check selected fields and press "Download Data"

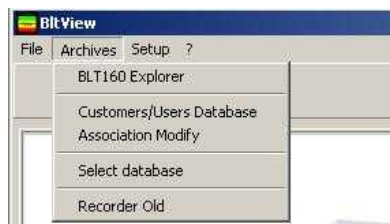
If the association for any data that has been read and registered is incorrect, it can be corrected using the offline "modify association" tool (see §5.3).

- Ø The "New" button allows you to enter a new customer/operator.
- Ø The "Modify" button allows you to change the name of a customer/operator (if not already used in the databases).
- Ø The "Cancel" button allows you to wipe the name of a customer/operator (if not already used in the database).
- Ø The "Close" button takes you back to the online page.

5 – OLD data consultation

Registered work data can be viewed off-line.

The "Archive" menu allows you to consult and manage this data.



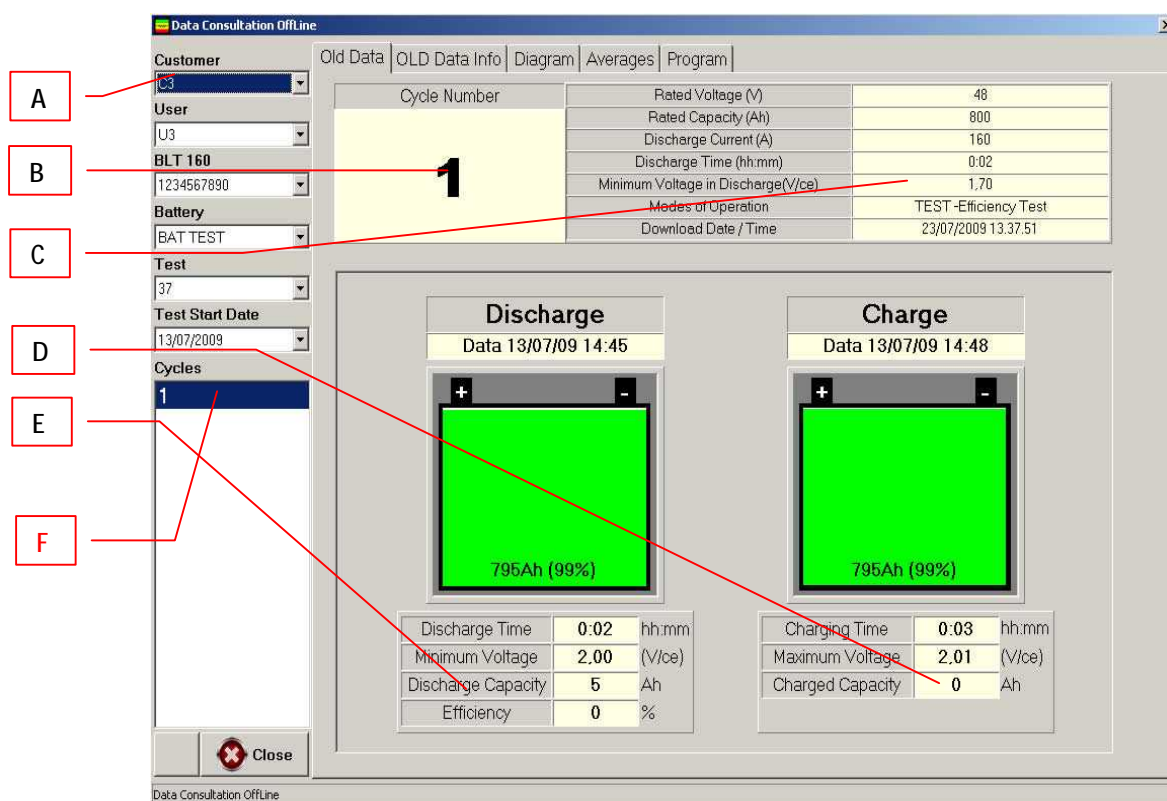
- Consult
- Modify customer and operator data
- Modify associations
- Read test cycle data saved in other files
- Read archived "recorder" diagram data.

5.1 – BLT160 Explorer

To consult the archived data, select "BLT 160 Explorer" from the "Archive" menu or press the respective button on the main page or online pages.

5.1.1 – TAB Data OLD

The "Data Old" window shows the main data of the selected work cycle.



There are these sections:

- A: data selection: Customer, Operator, BLT 160 serial number, Battery Identification, Test Number, Test start date
- B: Number of the selected cycle
- C: Plate data
- D: Charge data
- E: Discharge data
- F: Cycle selection tools

La fase di scarica è visibile:

- a) When the cycle's discharge process has started (correctly registered discharge start date)
- b) The Cycle Nr = 0
- c) The Cycle Nr is above 0 and the selected cycle is above 0.

La fase di carica è visibile:

- a) When the cycle's discharge process has started (correctly registered discharge start date)
- b) The Cycle Nr is above 0

5.1.2 – TAB Info OLD

The Info Old window presents the data for the selected work cycle.

The screenshot shows the 'Data Consultation Offline' window with the 'OLD Data Info' tab selected. The interface is divided into several sections:

- Customer Section (A):** Includes dropdowns for Customer (PBM), User (ANDREA), BLT 160 (0140748-2008L), Battery (test fw b138), and Test (48).
- Test Start Date (D):** A dropdown menu showing '03/08/2009'.
- Cycles (E):** A list of cycles (4, 3, 2, 1) with cycle 4 selected.
- Test Number (B):** A large display showing '48'.
- Cycle Number (C):** A large display showing '4'.
- Discharge Data:**
 - Discharge Start: 07/08/09 04:15
 - Discharge Time: 2:53 (hh:mm)
 - Pause Time After Discharge: 0:30 (hh:mm)
 - Capacity at Cycle Start: 770 (Ah), 96.3 (%)
 - Discharge Capacity: 461 (Ah), 57.6 (%)
 - Capacity at Discharge End: 0 (Ah), 0.0 (%)
 - Efficiency: 57 (%)
 - Minimum Voltage: 2.32 (V/cell)
 - Maximum Temp. on Electronic Card: 39 (°C)
- Charge data:**
 - Start Of Charging: 07/08/09 07:41
 - Stages Time: 1st 10:09, 2nd 0:00 (hh:mm)
 - Total Charging Time: 10:09 (hh:mm)
 - Pause Time After Charging: 0:00 (hh:mm)
 - Capacity at the Start of Charging: 0 (Ah), 0.0 (%)
 - Capacity charged in 1st Phase: 757 (Ah), 94.6 (%)
 - Capacity charged in 2nd Phase: 0 (Ah), 0.0 (%)
 - Total Input Capacity: 757 (Ah), 94.6 (%)
 - Recharging Incr. %: 3 (%)
 - Capacity at End of Charging: 734 (Ah), 91.8 (%)
 - Maximum Voltage: 2.32 (V/cell)
 - Maximum Current: 102.2 (A)
 - Current at the End of Charging: 0.0 (A)
- Active Anomalies List (G):**
 - 28-STOP.V. IN DISCH
 - 33-BATT CHARGER FUSE
 - 35-TIMEOUT IN CHARG

There are the following sections:

- A: Data selection: Customer, Operator, BLT 160 serial number, Battery Identification, Test Number, Test start date
- B: Number of the selected cycle
- C: Plate data
- D: Charge summary data
- E: Discharge summary data
- F: Fault Log
- G: Cycle selection tools

The discharge phase can be viewed:

- when the cycle's discharge process has started (correctly registered discharge start date)
- when the N CICLI (No. of CYCLES) parameter is at 0
- when the N CICLI (No. of CYCLES) parameter is more than 0 and the selected cycle is greater than 0.

The charge phase can be viewed:

- when the cycle's charge process has started (correctly registered charge start date)
- when the N CICLI (No. of CYCLES) parameter is more than 0

Ø The Print button allows you to print the data on the screen

Ø The "Close" button ends the offline session.

5.1.3 – OLD Graph TAB

The Graph TAB allows you to view current and voltage progress graphs for the selected cycle. The max capacity of the graphs depends on the device connected. Consult the BLT160 technical manual.

You can check the data sampling time in the "Graph Sampling Time" field on the "programming tab (it cannot be modified during the cycle).

There are these sections:

- A: Voltage graph for the selected cycle
- B: Current graph for the selected cycle
- C: Cycle selection tools

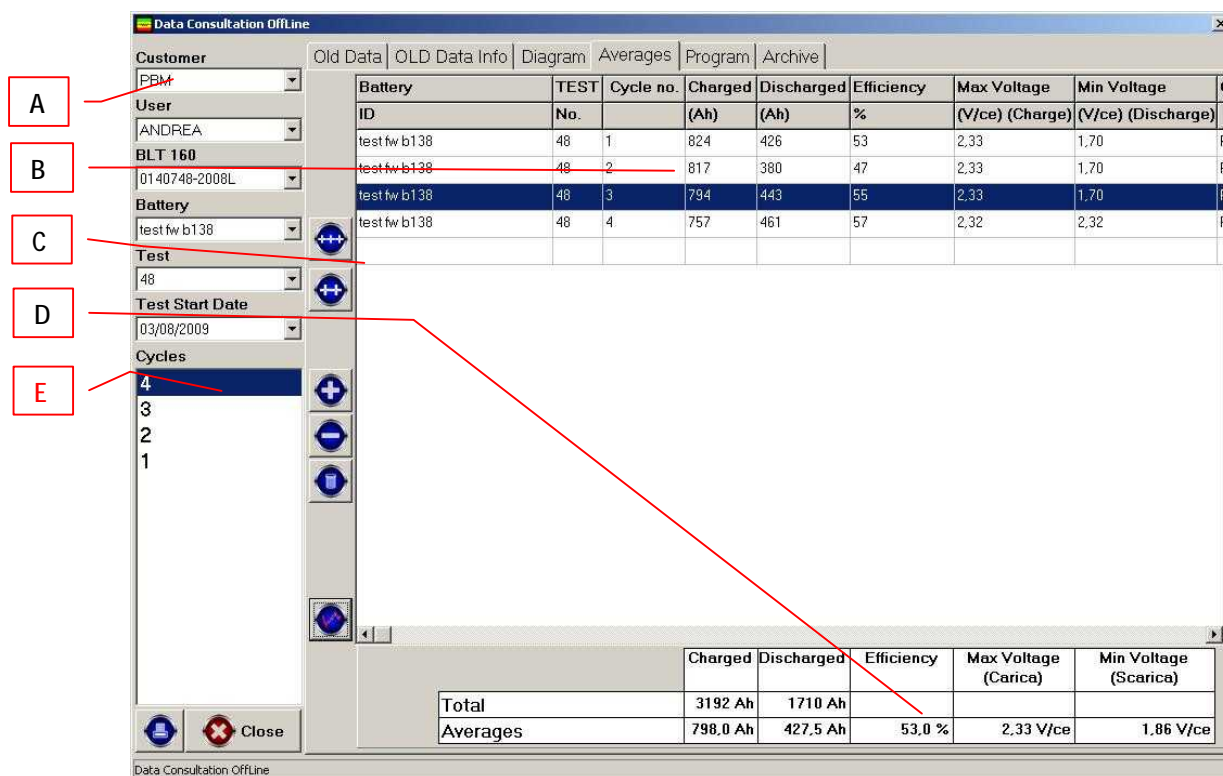


Ø The "CSV" button allows you to download current and voltage data in the form of a text file with defined fields (*.csv). The file is given a set name which you can change.

Ø The "Close" button ends the offline session.

5.1.4 – “Averages” TAB

This section allows you to valuate the progress of a battery's efficiency and max and minimum voltage according to cycle.



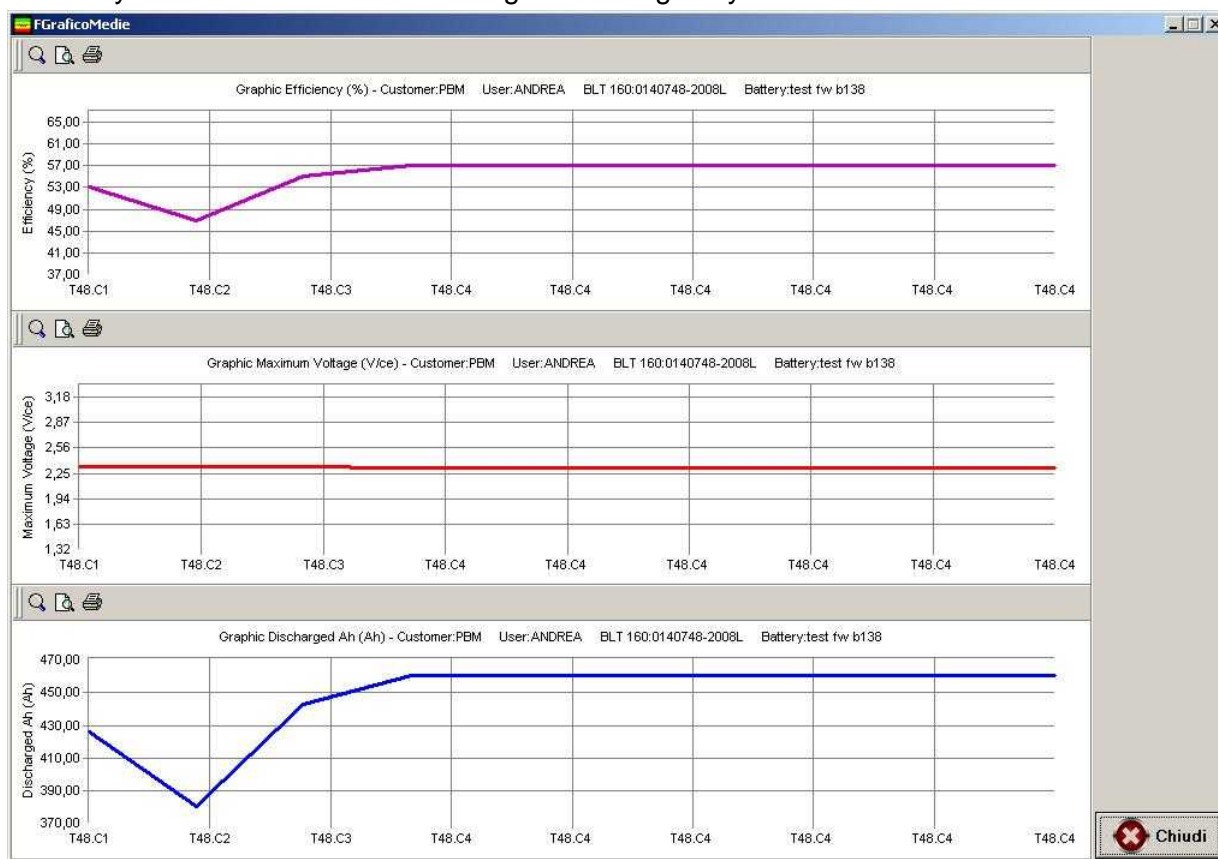
There are the following sections:

- A: Data selection: Customer, Operator, BLT 160 serial number, Battery Identification, Test Number, Test start date
- B: Table of data for the selected cycles
- C: Buttons for selecting cycles to be valuated
- D: Mean data of the selected cycles
- E: Cycle selection tools

- Ø The “+++” button allows you to select all of a battery's cycles
- Ø The “++” button allows you to select all of a test's cycles
- Ø The “+” button allows you to select a cycle
- Ø The “-” button allows you to deselect a cycle
- Ø The “wastebasket” button allows you to deselect everything
- Ø The “graph” button allows you to view the data in graphical form. See §5.1.4.1
- Ø The Print button allows you to print the data on a selected device.
- Ø The “Close” button allows you to end the offline session.

5.1.4.1 – “Averages Graph” TAB

The “graph” button on the “Averages” TAB allows you to valuate the progress of a battery’s efficiency and max and minimum voltage according to cycle.



- Ø There are three specific buttons for each of the two graphs:
 - Magnifying glass: allows you to select and enlarge an area of the graph.
 - Blank sheet with magnifying glass: for a print preview of the information on the screen.
 - Printer: to print out the information on the screen.
- Ø The “Close” button takes you back to the “Averages” TAB.

5.1.5 – Programming TAB

The Programming TAB allows you to view the programming parameters of a selected cycle.
The fields are described in section §4.2.1 on online programming.

The screenshot shows the 'Data Consultation OffLine' window with the 'Program' tab selected. The interface is divided into several sections:

- Left Panel:** Contains dropdown menus for Customer (PBM), User (ANDREA), BLT 160 (0140748-2008L), Battery (testfw b138), Test (48), and Test Start Date (03/08/2009). Below these is a 'Cycles' list with items 1, 2, 3, and 4, where 4 is selected and highlighted in blue.
- Top Tabs:** Old Data, OLD Data Info, Diagram, Averages, Program (selected), and Archive.
- Nominal Parameters:**
 - Rated Voltage: 48 (Volts)
 - Battery Ah: 800 (Ah)
 - Modes of Operation: TEST5-Efficiency test in 5h
 - Number of cycles: 6
 - Battery ID: testfw b138
 - Notes: sw 2.0 A
- Other Parameters:**
 - Diagram Sampling Time: 1 (Min)
 - Language: ITA
- Discharge:**
 - Discharge Current: 160 (A)
 - Discharge Time: 5:00 (hh:mm)
 - Discharge Stop Voltage: 1.70 (V/cv)
 - Pause Time After Discharge: 0:30 (hh:mm)
- Charge:**
 - Recharging Incr. %: 3 (%)
 - Voltage Threshold: 2.40 (V/cv)
 - Min. Time of Charge: 10:00 (hh:mm)
 - Max. Time of Charge: 16:00 (hh:mm)
 - Pause Time After Charging: 1:00 (hh:mm)
- Bottom:** A 'Close' button with a red X icon.

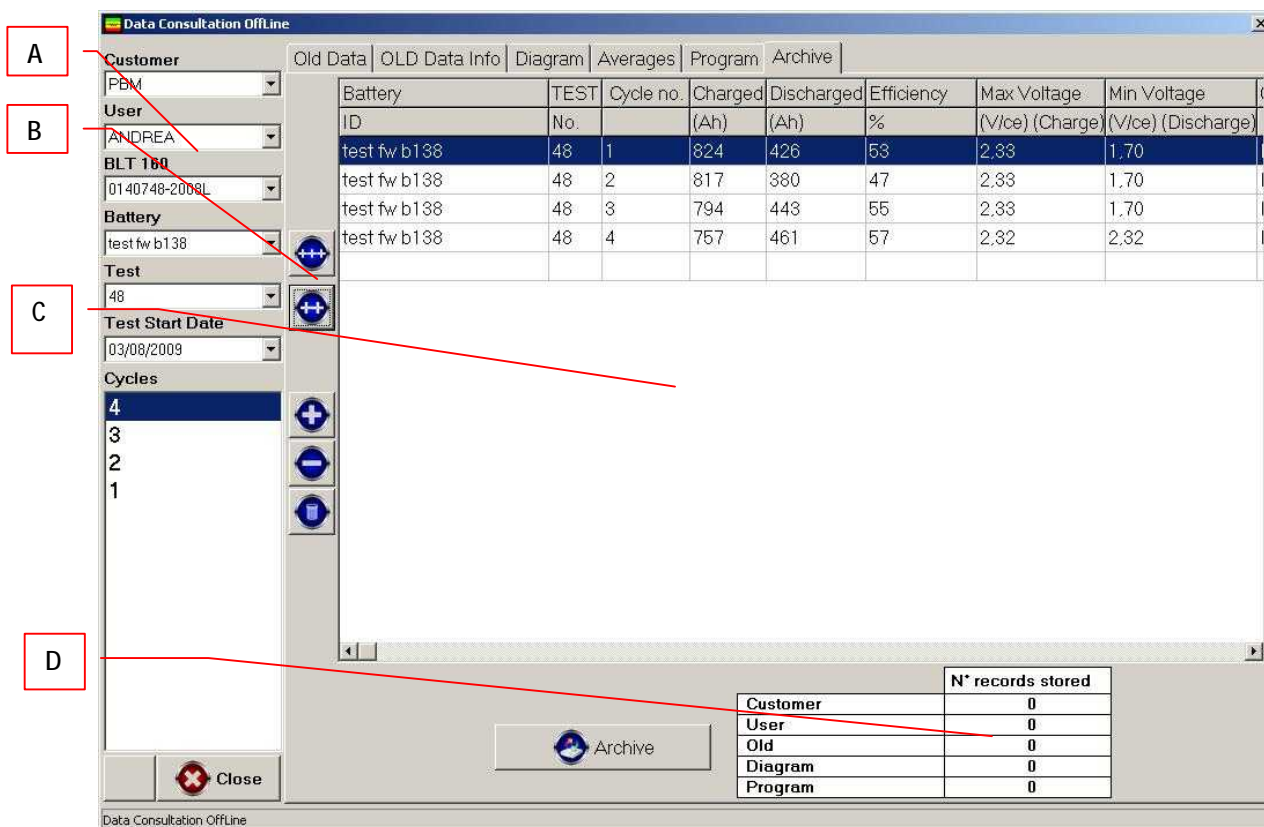
- Ø The Print button allows you to print the data on the screen
- Ø The "Close" button allows you to end the offline session.

5.1.6 – Archive TAB

This section allows you to archive other data in the database.

There are several main uses:

- To reduce the size of the database and speed up associated operations.
- To backup only the data required for valuation.
- To move and possibly wipe any data no longer of interest.



There are the following sections:

- A: Data selection
- B: Buttons for selecting cycles to be archived
- C: Table of the data to be archived
- D: Number of components to be archived

Ø The “+++” button allows you to select all of a battery’s cycles

Ø The “++” button allows you to select all of a test’s cycles

Ø The “+” button allows you to select a cycle

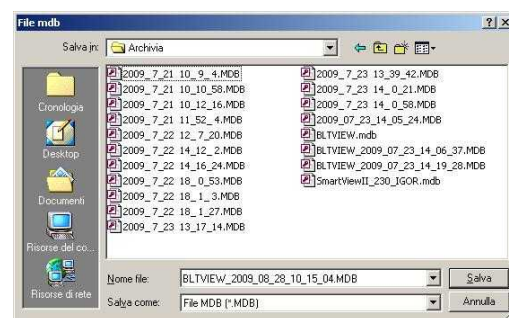
Ø The “-” button allows you to deselect a cycle

Ø The “wastebasket” button allows you to deselect everything

Ø The “Archive” button opens a window where you can select the name of the file in which to archive the selected data.

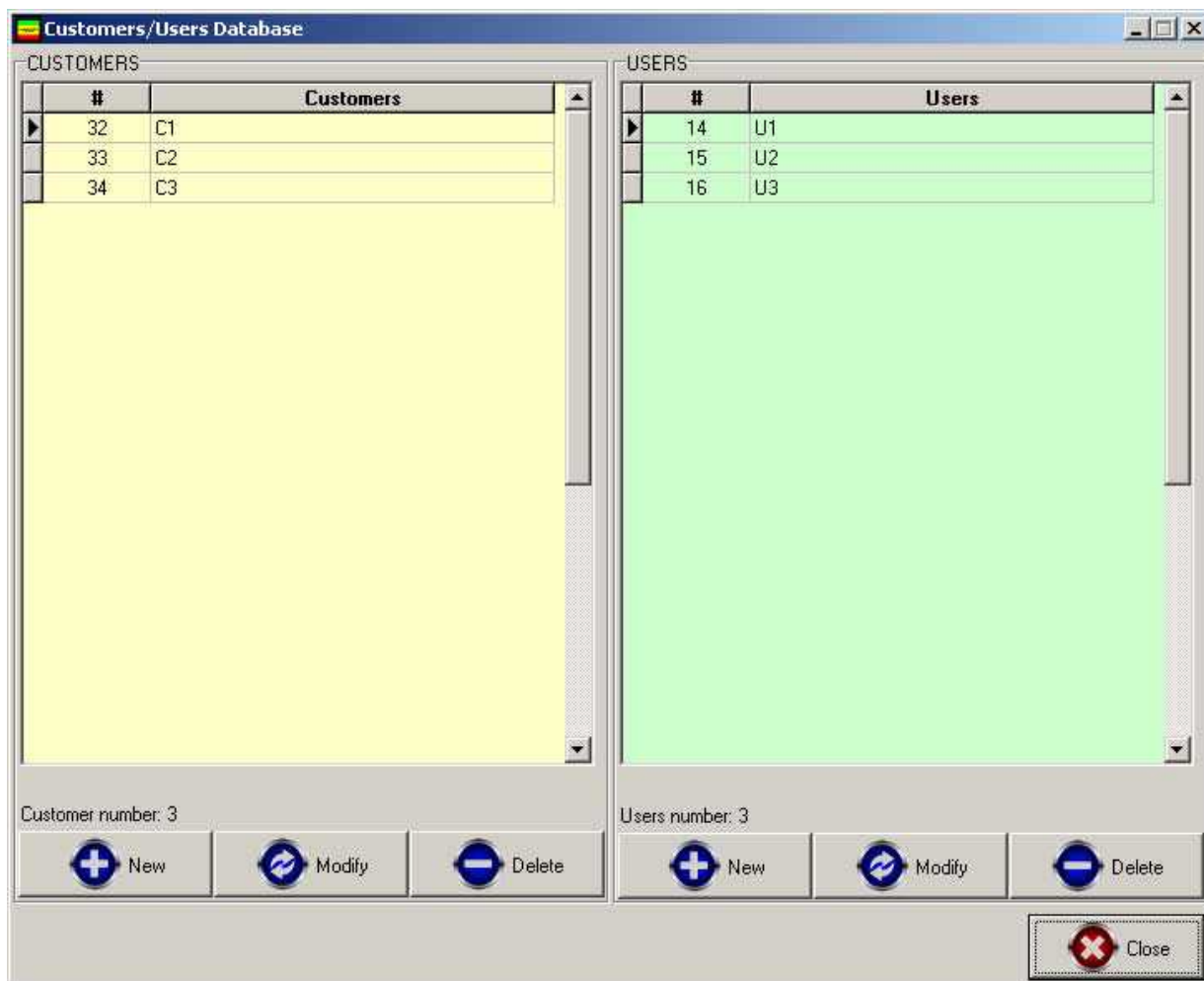
To make this process easier, a position and name are pre-selected according to the date of the operation.

Ø The “Close” button allows you to end the offline session.



5.2 – Customer/Operator data

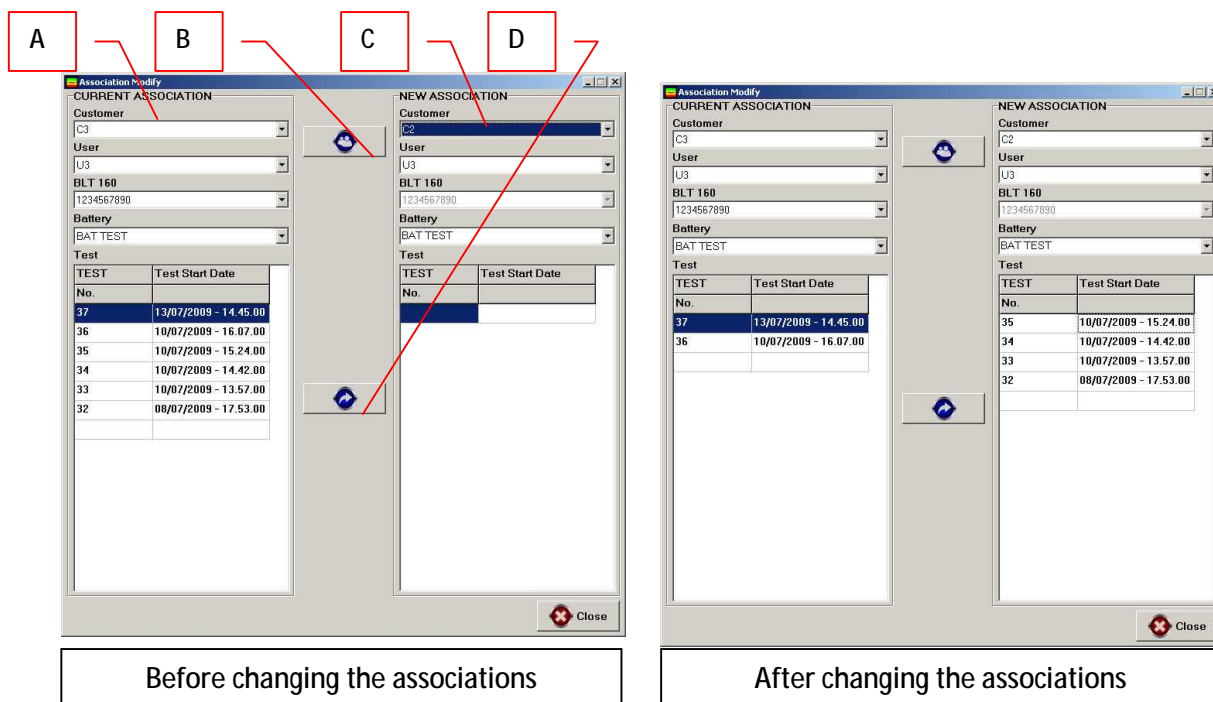
Select "Customer/Operator data" from the "Archive" menu or press the respective button to access the data on the Customers and Operators to be associated with the data on the BLT160 device.



- Ø The "New" button allows you to enter a new customer/operator.
- Ø The "Modify" button allows you to change the name of a customer/operator (if not already used in the databases).
- Ø The "Cancel" button allows you to wipe the name of a customer/operator (if not already used in the database).
- Ø The "Close" button takes you back to the main page.

5.3 – Modify the Associations

Select "Modify the associations" from the "Archive" menu or press the respective button to access the section for changing the associations of data downloaded from the BLT160.



There are the following sections:

- A: Test menu for the current associations
- B: Customer/Operator data configuration button (see §5.2)
- C: New association menu
- D: Association execution button

INSTRUCTIONS ON HOW TO MAKE A CHANGE:

- In the "CURRENT ASSOCIATIONS" section select the TESTS the associations of which you wish to change. It is possible select more than one at a time by pressing and holding the SHIFT button.
- In the "NEW ASSOCIATIONS" section select and/or add new associations for TESTS.
- Press the "MODIFY ASSOCIATIONS" button.
- The moved TESTS are listed in the "NEW ASSOCIATIONS" section.

5.4 –Database selection

Select "Select Database" from the "Archive" menu or press the respective button to access the archived databases.



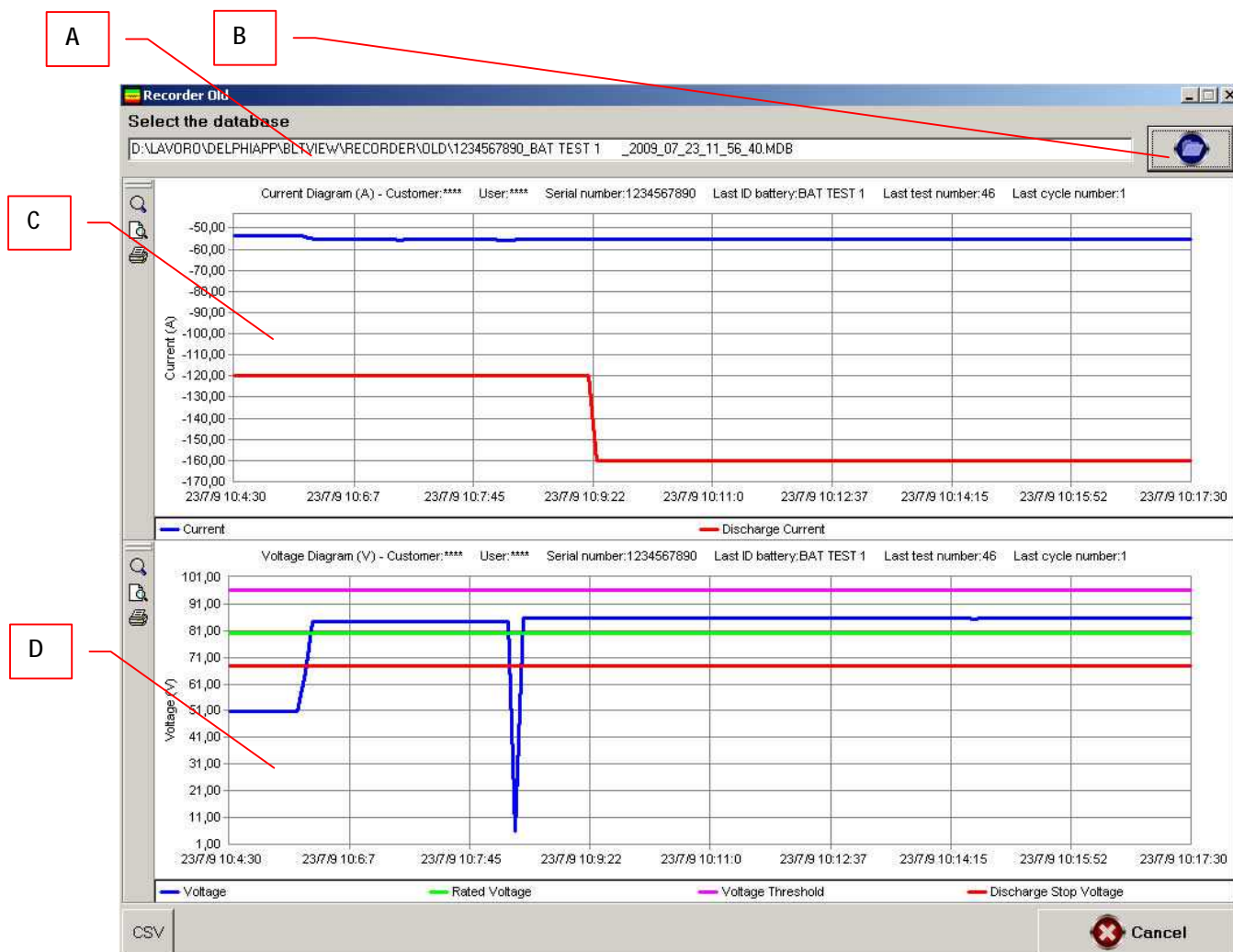
- A: directory of the selected database
- B: button for selecting the archived database
- C: pre-download the default database

After selecting the archived database you can only work offline until the default database is restored.



5.5 – Recorder OLD

Select "Recorder OLD" from the "Archive" menu to access the databases of the archived recorders.



There are the following sections:

- A: directory of the selected database
- B: button for re-selecting an archived "recorder"
- C: Current graph (charge/discharge current, programmed discharge current)
- D: Voltage graph (current voltage, programmed nominal voltage, programmed gas threshold voltage, programmed stop threshold voltage)

APPENDIX A

DFU program use

The **DFU** program is used to update the BLT160's firmware.

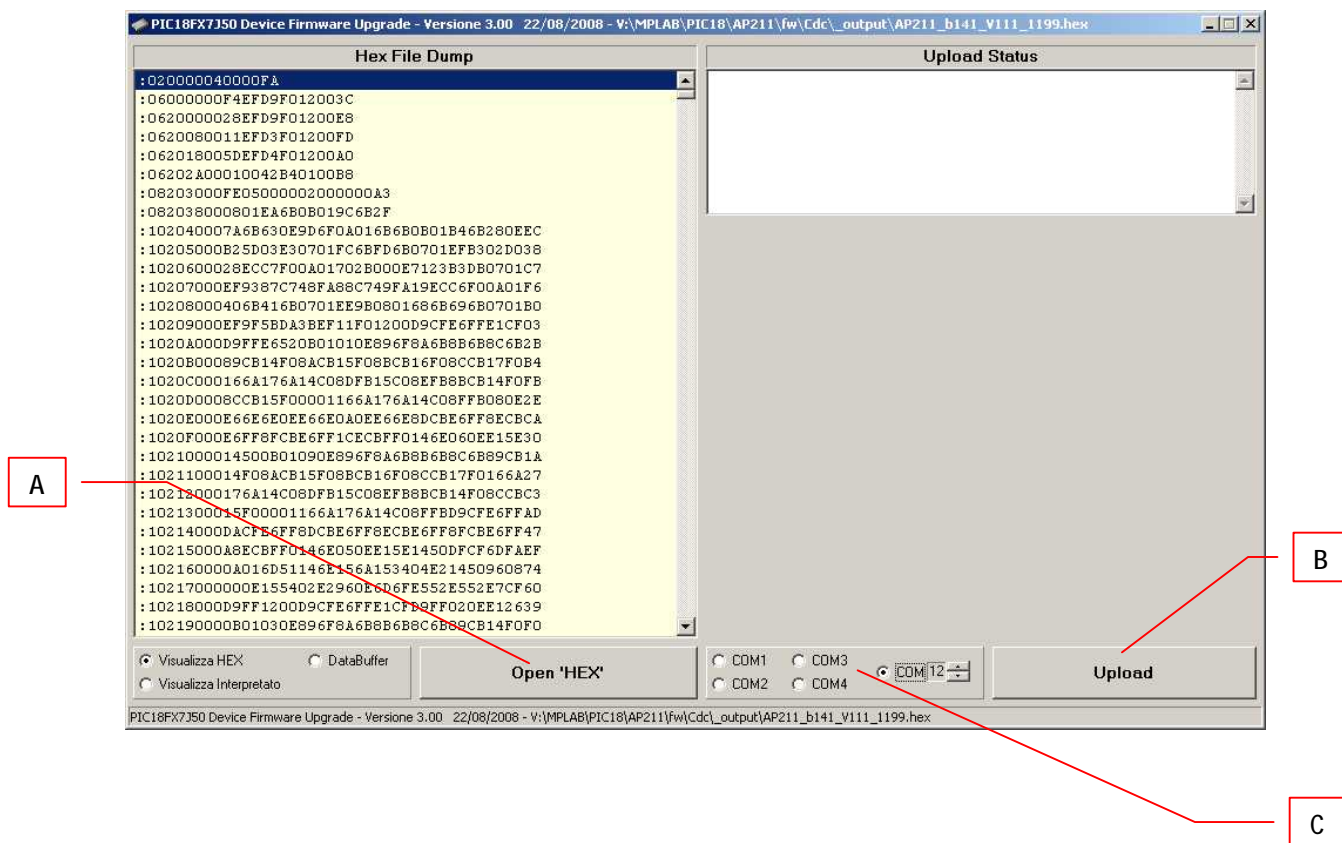
The update process requires a copy of the update file (with the *.hex* extension) on the PC.

- Connect the BLT160 to the PC using a serial connection cable
- Start up the *DFU* program
- Select the serial port associated with the BLT160. If you have a USB connection, select the port number assigned by Windows: *Windows Control Panel -> Device Manager -> Ports (COM and LPT)*
- Press the "Open 'HEX'" button and select the update file
- Switch off the BLT160 and disconnect the USB cable
- Connect the USB cable to the BLT160 by pressing and holding the BLT160's START/STOP button
- Release the START/STOP button after 2 seconds
- Press the "Upload" button in the DFU software within 8 seconds to run the update. The progress bar shows you the update status.

The BLT160 device restarts automatically at the end of the update process.

Legend for the picture:



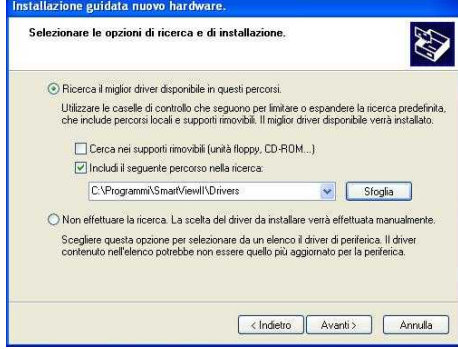
- A: "Open 'HEX'" button
- B: Upload/Pause button
- C: Upload progress bar
- D: Serial port selection







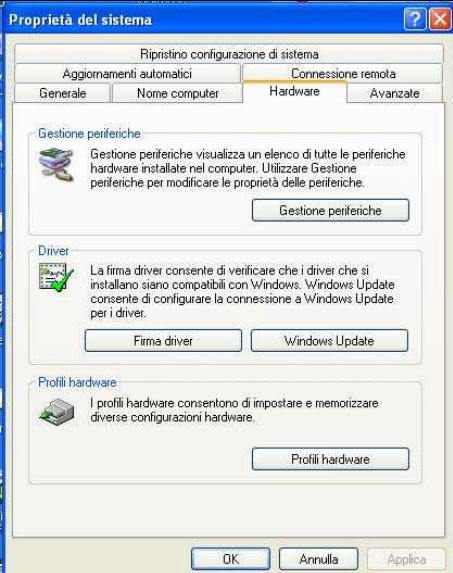
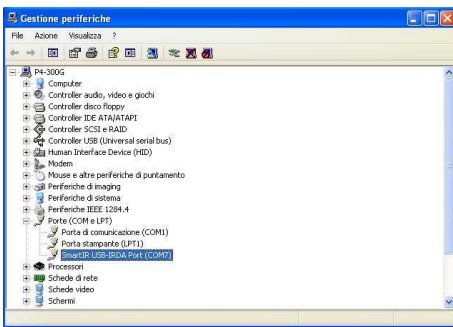

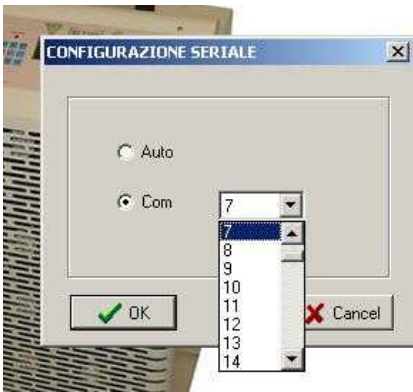
APPENDIX B

USB driver installation


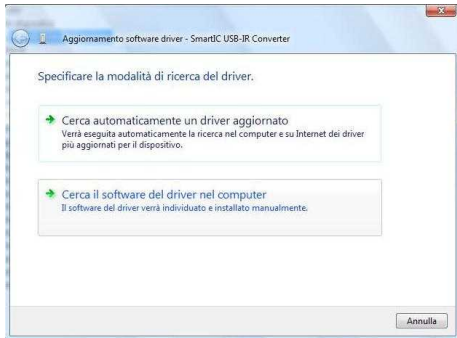
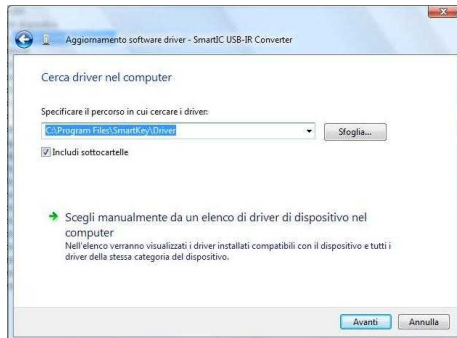
B1 - Installation of the USB DRIVER on Windows XP

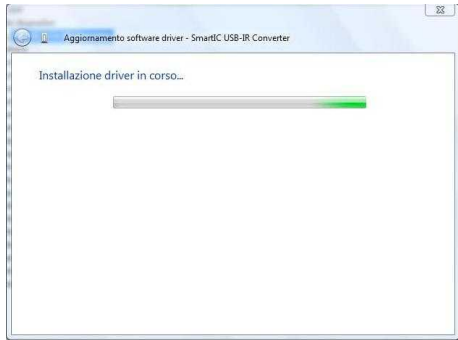

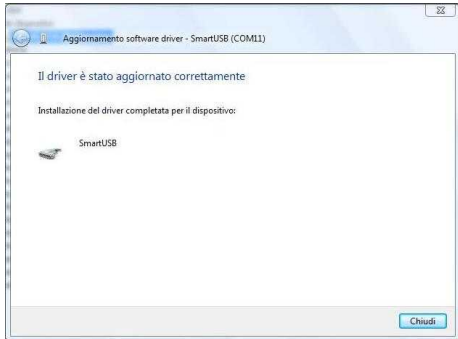

<p>1) Connect the USB cable to the computer's USB port and the BLT160. The new hardware is found.</p>	
<p>2) Follow the guided installation procedure. Select: <u>“Installa da un elenco o percorso specifico (per utenti esperti)”</u> <u>(Install from a list of specific location (advanced))</u></p> <p>Click “Avanti” (Next)</p>	
<p>3) Select: <u>“Ricerca il miglior driver disponibile in questi percorsi” (Search for the best driver in these locations)</u></p> <p>Select: <u>“Includi il seguente percorso nella ricerca”</u> <u>(include this location in the search)</u></p> <p>Press “Sfoglia” (Browse) and select the driver location.</p> <p>“C:\Programmi\BLTView\Drivers” (location created during BLTView installation).</p> <p>Click “Avanti” (Next)</p>	

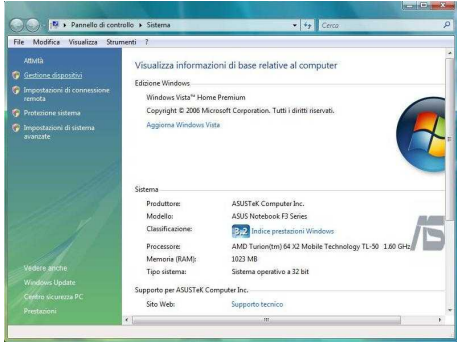
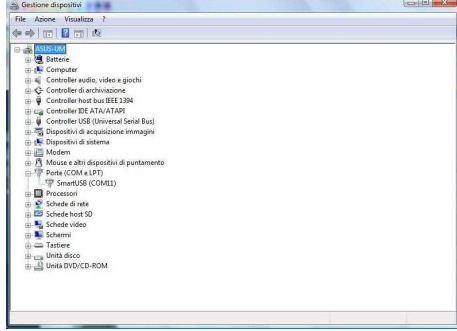

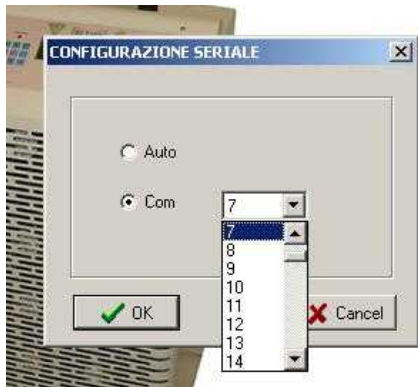
<p>4) Wait for installation to start</p>	
<p>5) Click "Continua" (Continue)</p>	
<p>6) Wait for installation to end Click "Fine" (Finish)</p>	
<p>7) Right-click "Risorse Del Computer" (My Computer). Click: "Proprietà" (Properties)</p>	
<p>8) Select the "Hardware" tab. Click "Gestione periferiche" (Device manager)</p>	

	
<p>9) In the list, select: <i>“Porte (LPT e COM)”</i> (USB Serial Ports (LPT and COM))</p> <p>Make sure the <i>SmartIR USB-IRDA</i> port is correctly installed.</p> <p>The port number is given. In the picture, the port number is COM7.</p> <p>Close all the windows.</p>	
<p>10) Open BLTView</p> <p>From the main menu select <i>“Impostazione”</i> (Settings) and then <i>“Porta Seriale”</i> (Serial Port)</p>	
<p>11) Select the required serial port and press OK.</p>	

B2 - Installation of the USB DRIVER on Windows VISTA

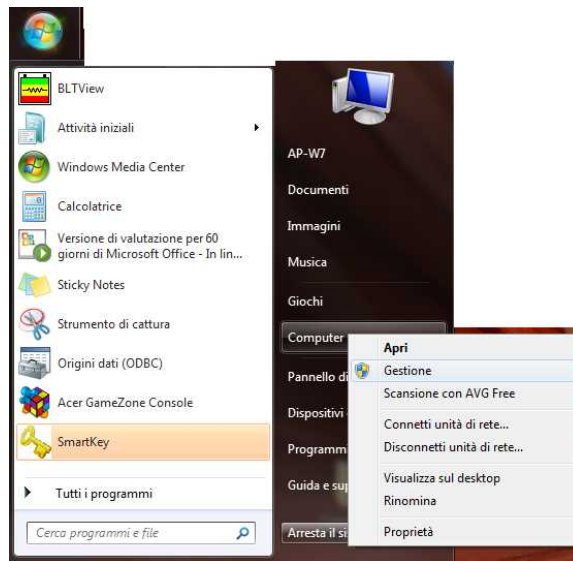
1) Connect the USB cable to the computer's and BLT160 USB port. The new hardware is found.	
2) Follow the guided installation procedure. Select: <u>"Individuare e installare il driver (scelta consigliata)"</u> <u>(Locate and install driver software - recommended)</u>	
3) Select: <u>"Cerca il software del driver nel computer"</u> <u>(Browse my computer for driver software)</u>	
4) Click <i>"Sfoglia"</i> (Browse) and browse to the folder where the driver has been stored. "C:\Programmi\BLTView\Drivers" (location created during BLTView installation). Select: <u>"Includi sottocartelle"</u> (include subfolders) Click <i>"Avanti"</i> (Next)	

<p>5) Wait for installation to start</p>	
<p>6) Click <i>"Installa il software del driver"</i> (Install driver software)</p>	
<p>7) Wait for installation to end</p> <p>Click <i>"Chiudi"</i> (Close)</p>	
<p>8) Right-click on <i>"Risorse Del Computer"</i> (My Computer)</p> <p>Select: <i>"Proprietà"</i> (Properties)</p>	

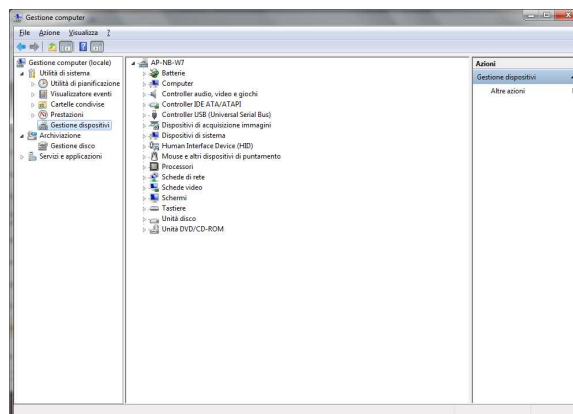
<p>9) Select <i>“Gestione dispositivi” (Hardware)</i></p> <p>Click <i>“Gestione periferiche” (Device Manager)</i></p>	
<p>10) In the list, select: <i>“Porte (LPT e COM)” (USB Serial Ports LPT and COM)</i></p> <p>Make sure the <i>SmartUSB</i> port is correctly installed.</p> <p>The port number is given. In the picture, the port number is COM11.</p> <p>Close all the windows</p>	
<p>11) Open BLTView</p> <p>From the main menu select <i>“Impostazione” (Settings)</i> and then <i>“Porta Seriale” (Serial Port)</i></p>	
<p>12) Select the required serial port and press OK.</p>	

B3 - Installation of the USB DRIVER on Windows VISTA

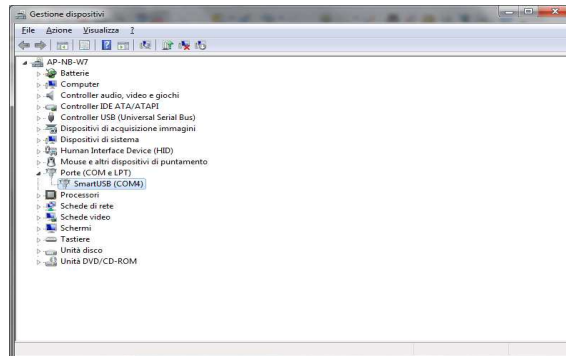
Open device manager with "Start → Computer → right-click → Gestione (Manage)"



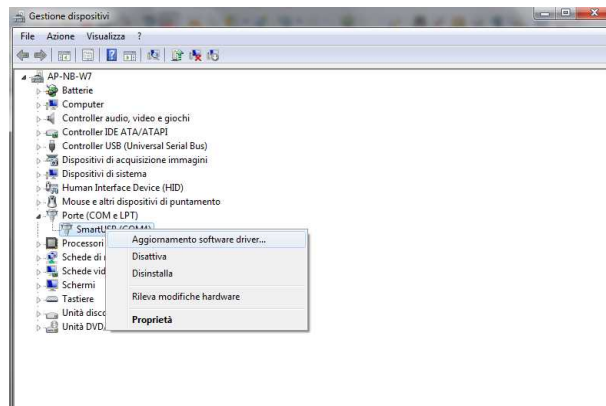
Select "Gestione dispositivi (Device Manager)"



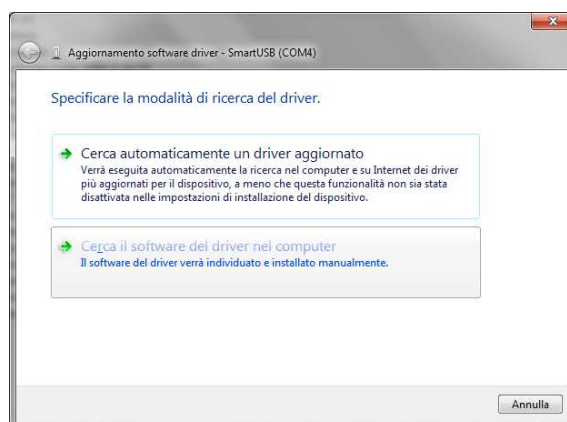
Select "Porte (COM & LPT) (COM & LPT Ports)→ SmartUSB(Comxx)"



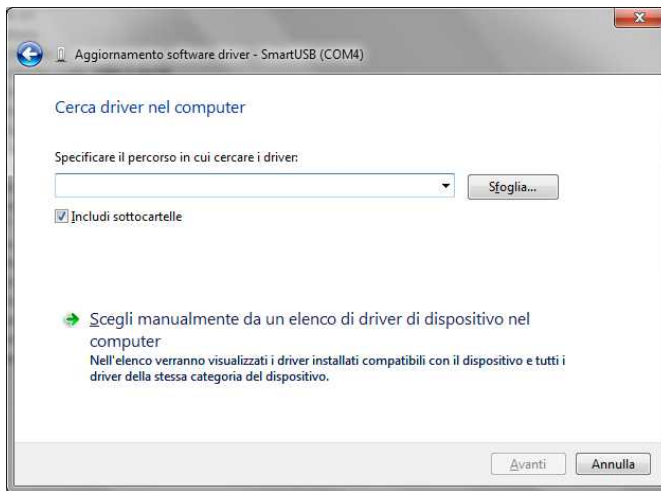
Select "(right-click → Aggiornamento software driver (Update driver software))"



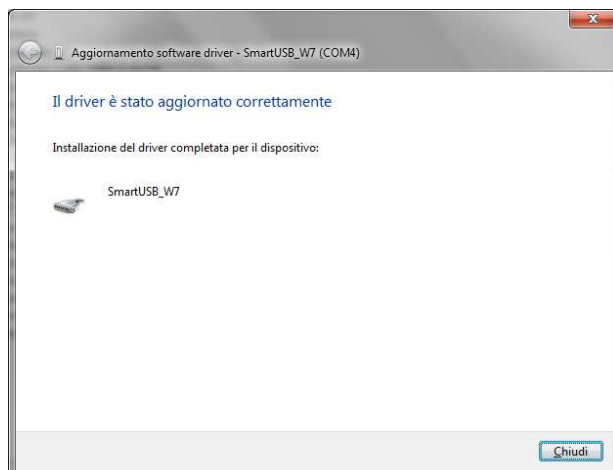
Select manual driver search:



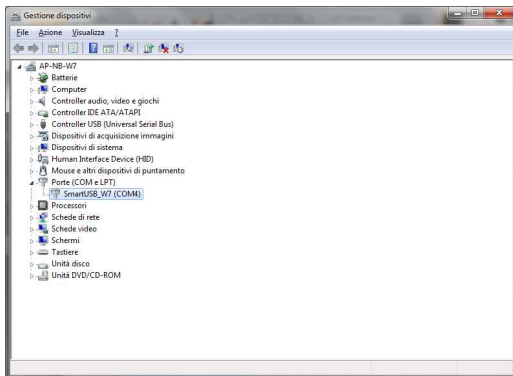
Using the "Sfogli" (Browse) function, find the path where the driver file was previously saved (E.g.:\\.\...\Driver\Win7)



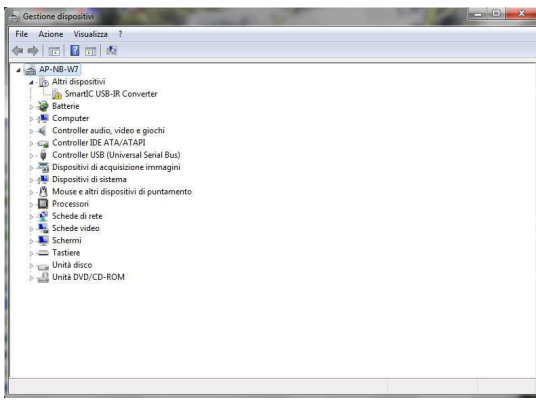
Allow the system to install the selected software.



Verify that installation was completed correctly by way of the SmartUSB_W7(COMxx) wording, where xx (for example here xx=4) is the serial port number to be remembered and inserted in the control software setup.



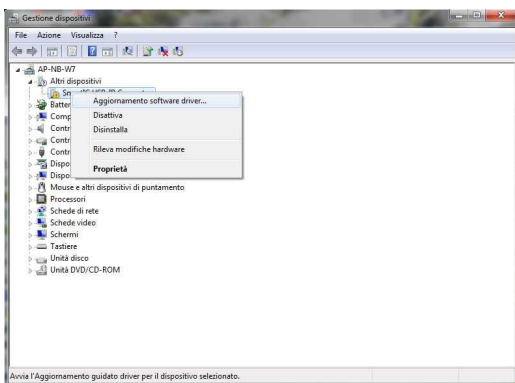
NOTE: If the device is under the heading **Other devices:**



Select:

Mouse Right button → SW Driver Update

(In Italian Mouse Right Button → Aggiornamento Software Driver)



Follow the steps to page 35

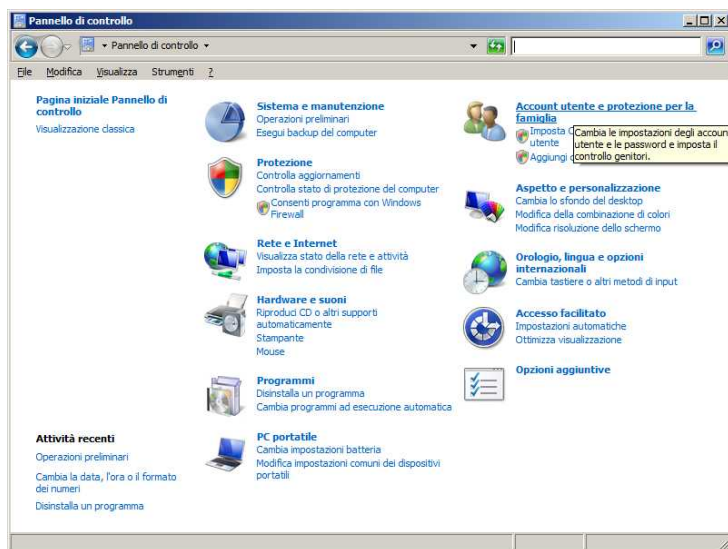
APPENDIX C

C1 – DATABASE Opening on Windows VISTA

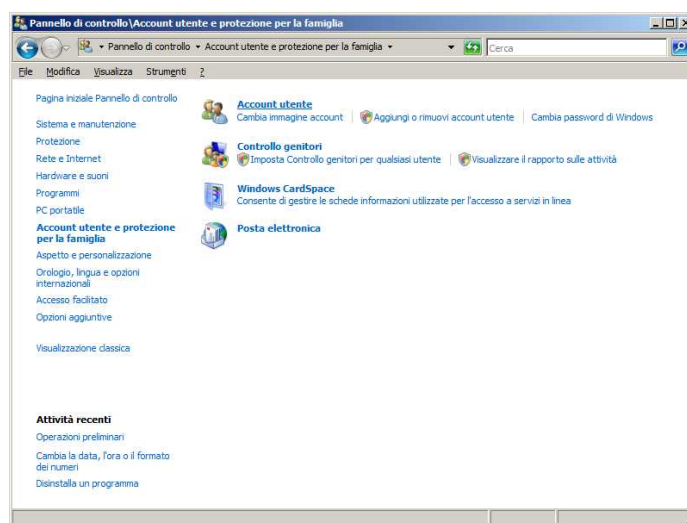
Procedure for disabling user control to be able to open and write databases :

Open device manager with "start → Pannello di controllo (Control Panel)"

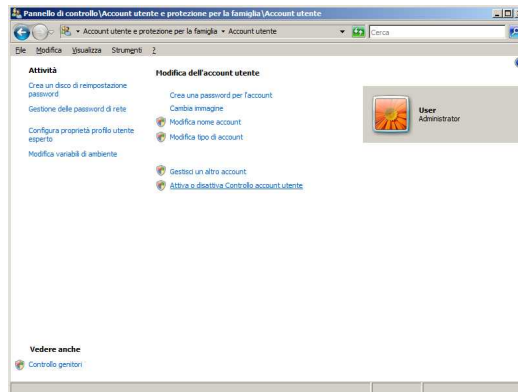
Select the "Account utente e protezione per la famiglia (User account and family protection)" menu



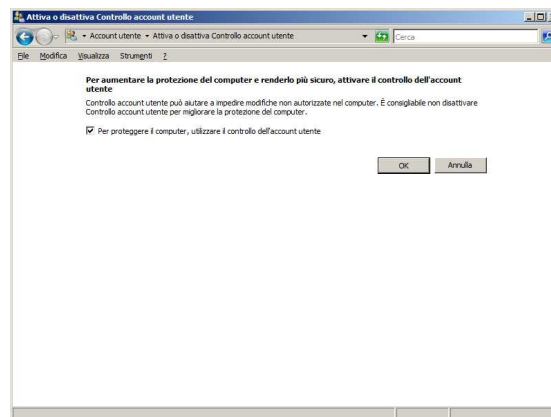
Select "Account utente (User Account)"



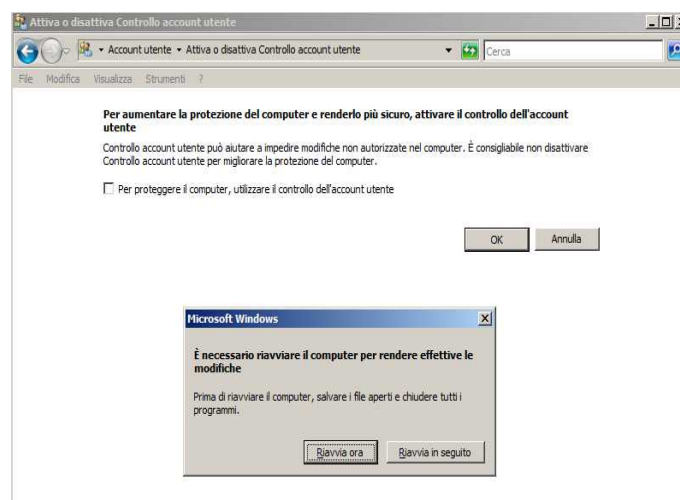
Select "Attiva o disattiva Controllo account utente (Activate or deactivate User account control)"



Remove the "Per proteggere il computer, utilizzare il controllo dell'account utente (Protect the computer using user account control)" flag and press "OK".



Restart the computer by pressing "Riavvia ora (Restart now)"

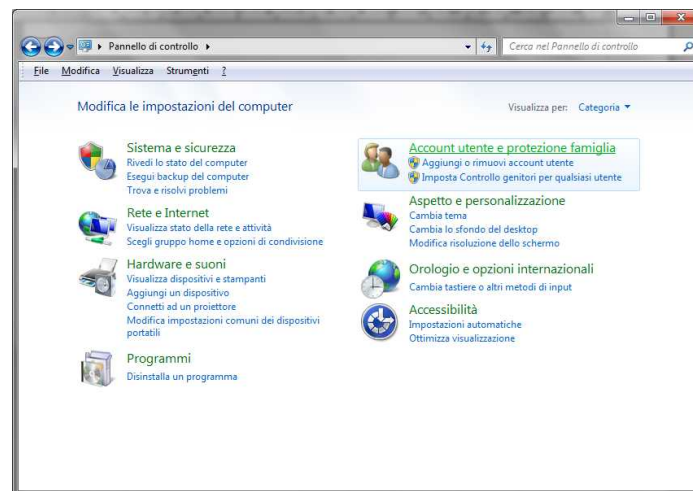


C2 – DATABASE Opening on Windows 7

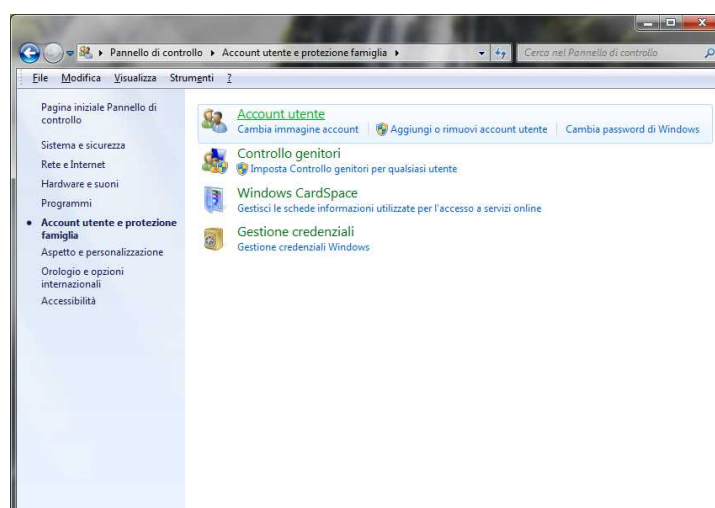
Procedure for disabling user control to be able to open and write to databases:

Open the device manager with "start → Pannello di controllo (Control panel)"

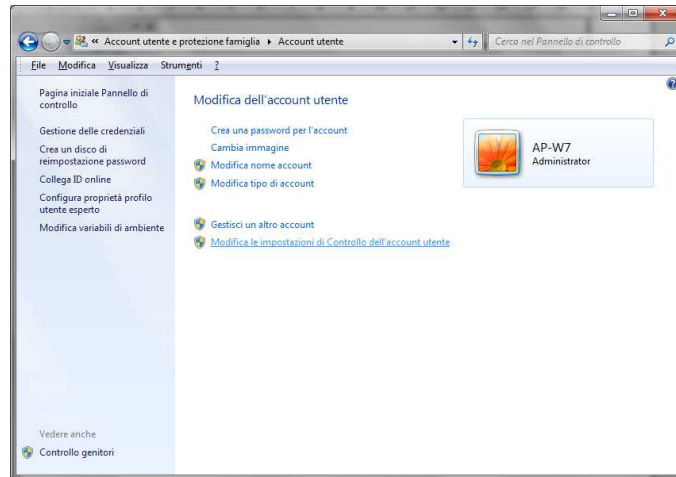
Select the "Account utente e protezione per la famiglia (User account and family protection)" menu



Select "Account utente (User Account)"



Select "Modifica le impostazioni di Controllo dell'account utente (Modify control settings for user account)"



Move the cursor from the predefined position (3rd level) to the lowest one and press "OK".

