UniProbe

User Manual

ELEKTRO PARTNER

www.elektropartner.com

en

SUMMARY

MSS USER MANUAL

Introduction

Dear Customer,

We would like to thank you for choosing a TEXA product for your workshop.

We are certain that you will get the greatest satisfaction from it and receive a great deal of help in your work.

Please read through the instructions in this manual carefully and keep it for future reference.

Reading and understanding the following manual will help you to avoid damage or personal injury caused by improper use of the product to which it refers.

TEXA S.p.A reserves the right to make any changes deemed necessary to improve the manual for any technical or marketing requirement; the company may do so at any time without prior notice.

This product is intended for use by technicians specialized in the automotive field only. Reading and understanding the information in this manual cannot replace adequate specialized training in this field.

The sole purpose of the manual is to illustrate the operation of the product sold. It is not intended to offer technical training of any kind and technicians will therefore carry out any interventions under their own responsibility and will be accountable for any damage or personal injury caused by negligence, carelessness, or inexperience, regardless of the fact that a TEXA S.p.A. tool has been used based on the information within this manual.

Any additions to this manual, useful in describing the new versions of the program and new functions associated to it, may be sent to you through our TEXA technical bulletin service.

This manual should be considered an integral part of the product to which it refers. In the case it is resold the original buyer is therefore required to forward the manual to the new owner.

Reproduction, whole or in part, of this manual in any form whatsoever without written authorization from the producer is strictly forbidden.

The original manual was written in Italian, every other language is a translation of the original manual.

1 SOFTWARE USER INSTRUCTIONS

The use of this software is bound to the conditions described in the License Agreement and the International Warranty.

The license agreement is also available and can be downloaded from the website www.texa.com under "Legal Info".

1.1 Device/Module Unlock

The purchased tool/device needs to be unlocked before it can be used.

The tool/device can be unlocked by entering a specific unlock code that can be obtained by your retailer.

This operation must be repeated each time a new device/module is connected to the PC.

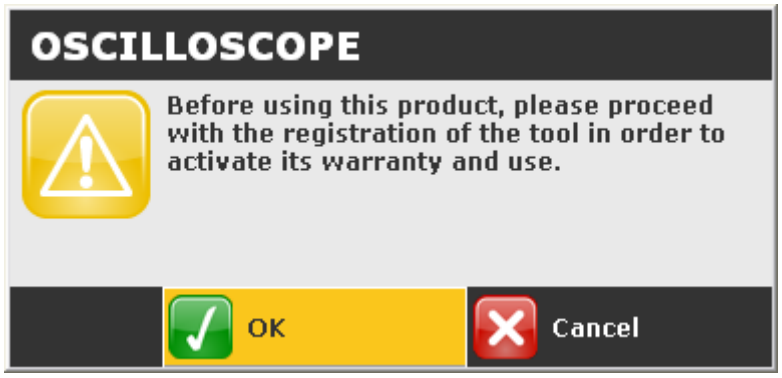
Proceed as follows:

1. Configure the tool/device that you wish to unlock via the **Automatic Configuration** function.

2. Launch the desired function.

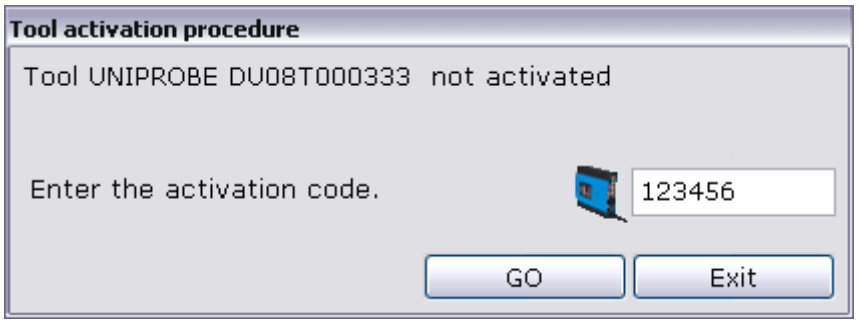
A message will inform you that the tool/device needs to be unlocked.

3. Click on .



4. Enter the unlock code provided by your retailer.

5. Click on the icon **NEXT**.



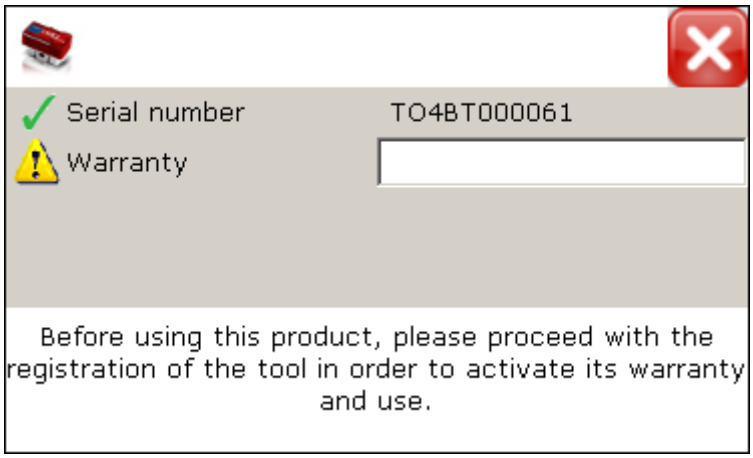
6. Click on **Quit**.

The device / module is unlocked.

NOTE

If the device is an OBD MATRIX proceed as follows:

1. Enter the unlock code provided by your retailer.



2. Press the enter key.

The device is unlocked.

1.2 Connecting to the Device/ Module

In order for this software to work properly the communication between the software and the device/module with which it will interface must be properly configured.

The software provides special functions in relation to communication configuration.

A Bluetooth connection is generally recommended.

The information that follows also applies when the software must interface with more than one tool/device at the same time.

In order to guarantee that the software will work properly with the device / module, make sure you read the device/module manual carefully.

1.3 Selecting the Functions

All the software functions are launched by clicking on their corresponding icon.

You may not be able to select certain functions when making selections or when carrying out tests.

The colour of the icon that corresponds to the function tells you whether or not the function is available:

ICON	DESCRIPTION
	Clickable icon - Function available
	Non-clickable icon - Function not available

Icons used for various functions are as follows:

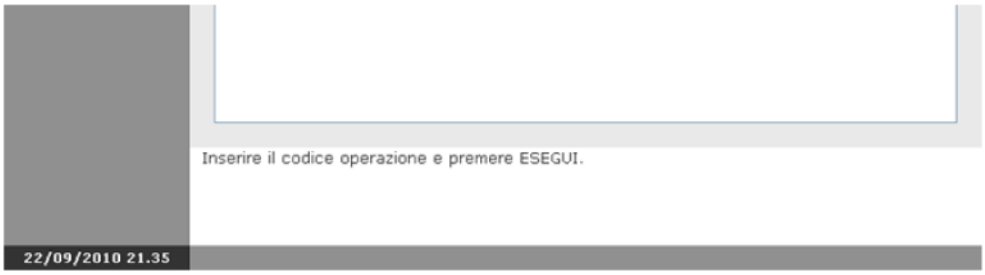
ICON	DESCRIPTION
	Allows you to close the function.
	Allows you to minimize the function/software.

Whether or not certain functions are available depends on the selection you have made.

1.4 User Notifications

The software can provide information on the operations that must be carried out during the tests by displaying messages and/or short videos.

The messages appear in a designated area on the lower part of your screen.



The software will display messages to inform the user if any errors or anomalies occur.

The software will inform the user if, for instance:

- *there are communication errors,*
- *ambient conditions do not correspond to those required in order to carry out the tests,*
- *etc.*

1.5 Password

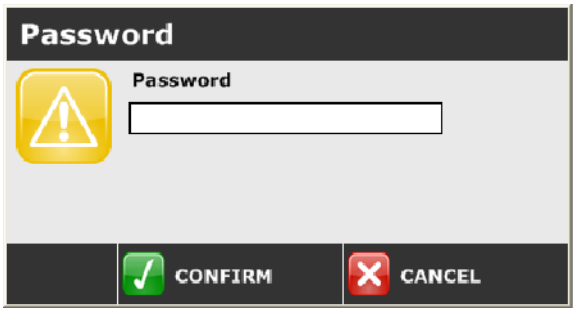
Certain functions are protected by passwords with different levels of protection.

The password **1236** allows access to the user only.

The functions that cannot be accessed with this password are for technical assistance personnel or retailer only.

Proceed as follows:

1. Click on the icon of the function desired.
2. Enter the password.
3. Click on  .



You may now access the desired function.

1.6 Disclaimers

Due to the particularity of certain functions, you are required to accept the conditions within specific disclaimers in order to access them.

The disclaimers impose certain terms that regulate the use of the device with which the software will interface.

The functions can **only** be used once the conditions in the relative disclaimers are accepted.

You are prompted with the disclaimers when the function is launched for the first time (ex.: standard self-diagnosis, Matrix self-diagnosis) for each version installed.

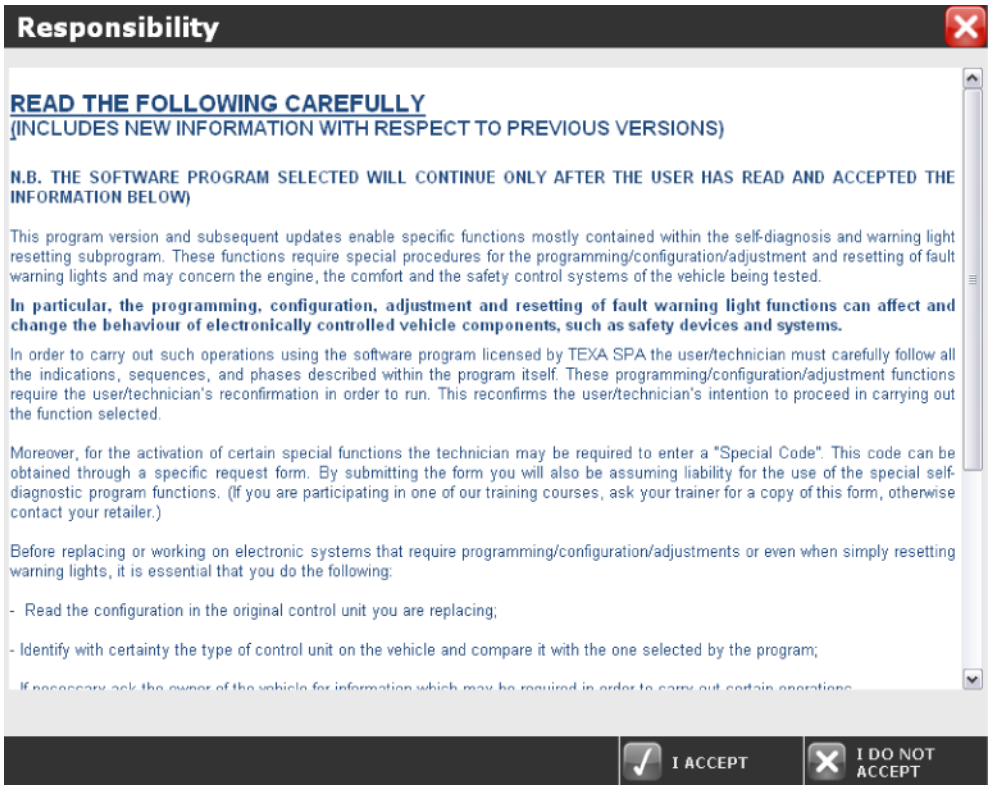
Once the conditions that regulate the use of the functions within the disclaimer have been read and accepted, the software will proceed in activating these specific functions.

If the disclaimer is not accepted, you will not be able to access the functions the declaration refers to.

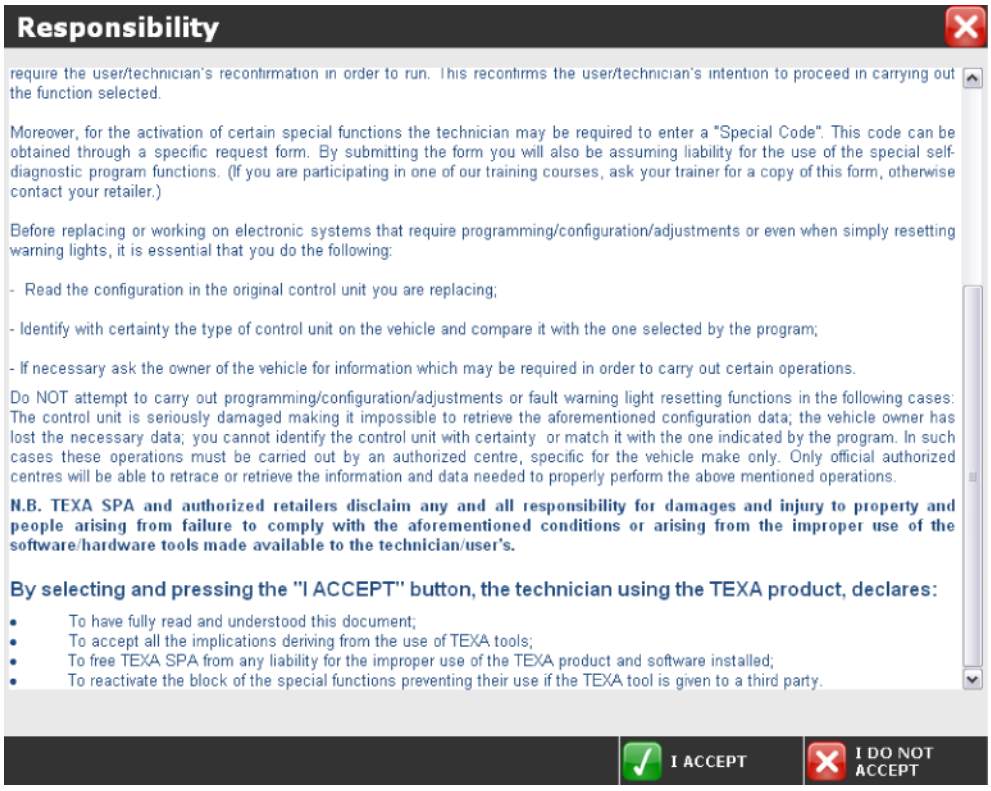
You will be prompted with the disclaimer and the relative acceptance request of the user conditions each time the function is launched.

Proceed as follows:

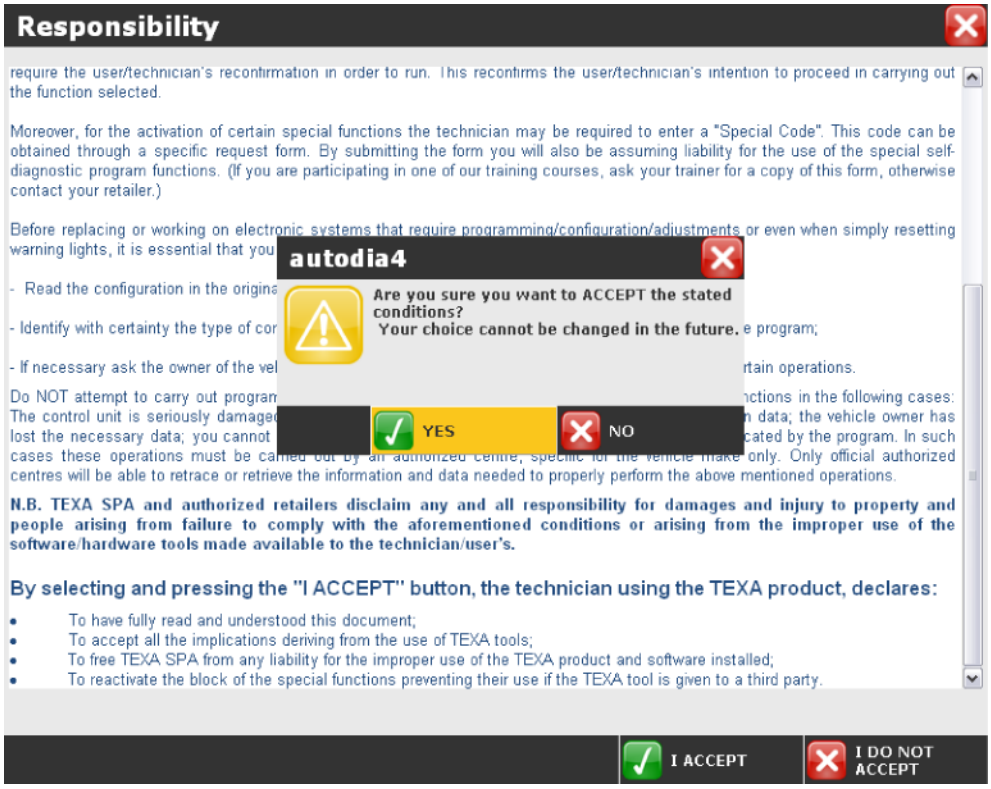
1. Read the disclaimer completely, scroll the text using the vertical scroll bar.



2. Click on 



3. Click on the icon  .



You may now access the self-diagnosis functions.

1.7 Internet connection

Certain functions may require an adequate active and working Internet connection.

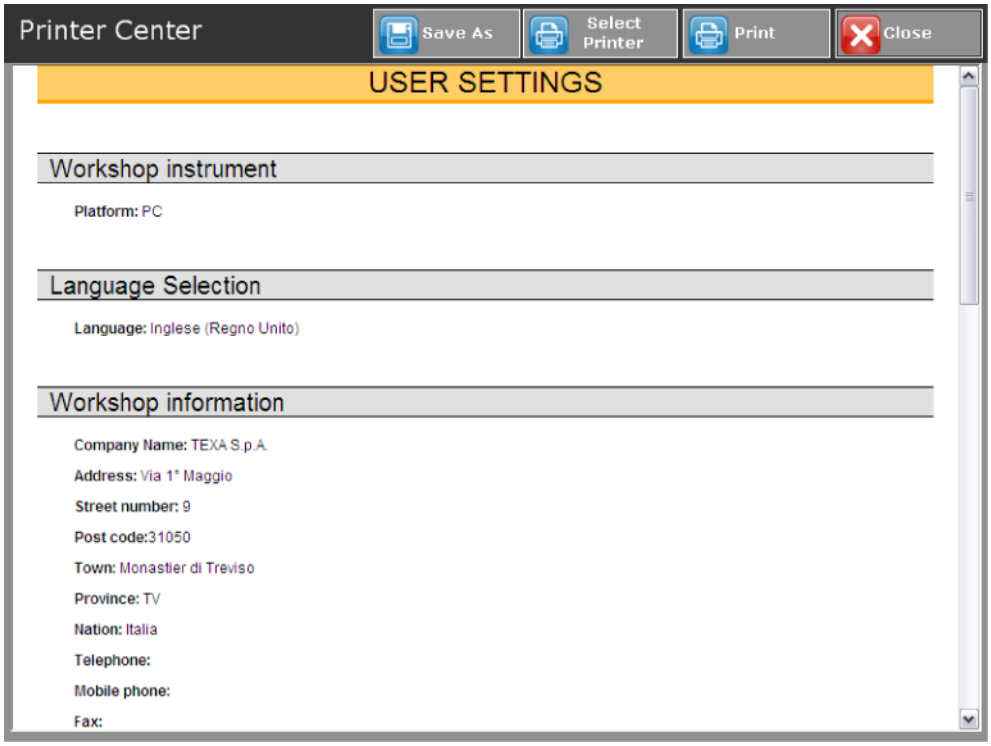
An ADSL type of connection is generally recommended.

1.8 Services available by Subscription

Certain functions may require a specific subscription (i.e. updating via Internet). For more information contact your retailer.

1.9 Print

Certain functions within this software allow you to print a report of the desired test or screen.



ICON	NAME	DESCRIPTION	REFERENCE CHAPTER
	Save As..	Allows you to save the report in html format on your PC.*	--
	Printer Select	Allows you to start the system functions to choose the printer you wish to use.	--
	Print	Allows you to print the report.	--
	Close	Allows you to quit the function.	--

(*) Not available for all functions.

1.10 Video

Certain functions within this software use a video to show you the exact location of an electronic component within the vehicle being tested or to illustrate a specific operation that must be carried out.

ICON	NAME	DESCRIPTION	REFERENCE CHAPTER
	Play	Allows you to launch the video.	--
	Pause	Allows you to pause the video.	--
	Stop	Allows you to stop the video.	--

In some cases there are only two icons.

In these cases the icon becomes after you have clicked on it.

2 MSS - MEASUREMENT SYSTEM SOFTWARE

MSS is a software that allows to:

- *Carry out analogue measurements.*
- *Carry out analogue measurements.*
- *Generate signals.*
- *Carry out a test on the vehicle CAN network.*
- *Carry out a test on the vehicle battery.*

Proceed as follows:

1. Click on the icon of the function desired.

Icon	Name	Description	Notes
	KV Analysis	Allows you to launch the function used to carry out high voltage measurements.	--
	Battery Probe	Allows you to launch the function used to carry out tests on the battery, starter and charger.	--
	Signal generator	Allows to simulate input and output signals of ECUs.	--

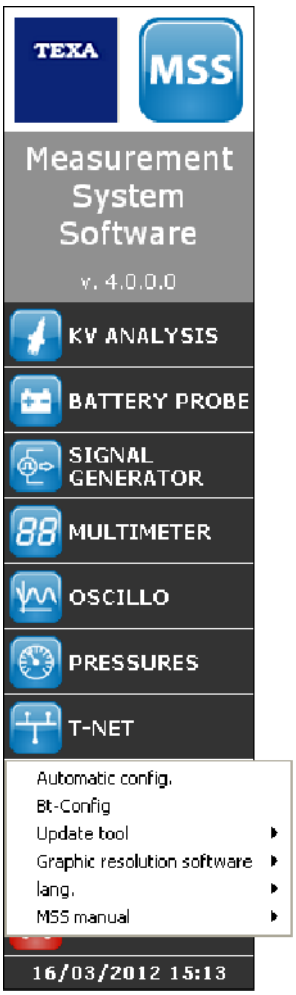
	Multimeter	Allows you to launch the function used to carry out measurements on voltage, current, etc.	--
	Oscilloscope	Allows you to launch the function used to carry out oscilloscope measurements.	--
	Pressures	Allows you to launch the function used to carry out pressure measurements.	--
	T-Net	Allows to carry out the diagnosis on the vehicle CAN network.	--
	Service Programs	Allows you to access the service functions related to the software.	--
	Minimize	Allows to minimize the software.	--

2.1 Service Programs

This function allows you to access the service functions related to the software.
Proceed as follows:

1. Click on  .

The drop-down menu listing the functions that can be started is displayed.



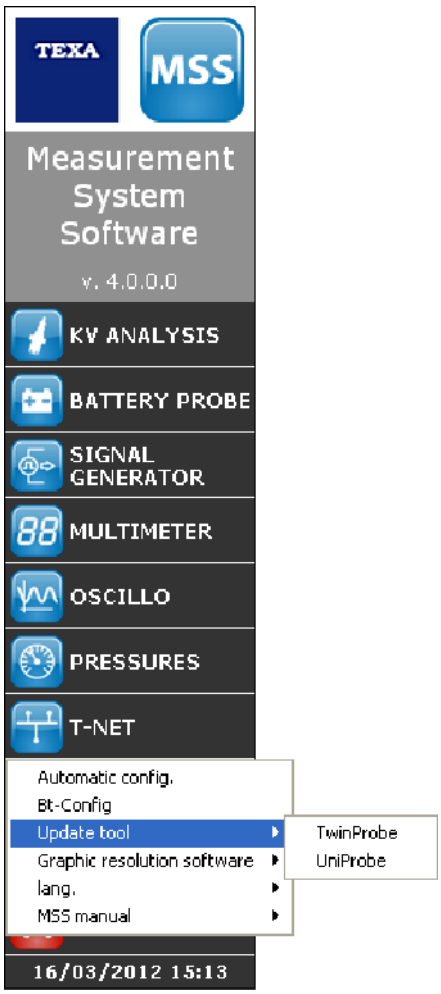
Name	Description	Notes
Automatic Configuration	Allows you to launch the automatic procedure for device configuration.	--
BT-Config	Allows you to configure the communication between the software and the Bluetooth devices.	--
Update Tool	Allows updating the firmware of the measurement tools.	--
Software Graph Resolution	Allows to modify the software graph resolution.	--
Language	Allows you to modify the language in which the software is displayed.	--

MSS Manual	Allows you to view the software manual.	--

2.1.1 Update Tool

This function allows updating the firmware of the measurement tools.
Proceed as follows:

1. Click on the item **Update device**.
2. Select the device that you wish to update.



The update procedure is launched.

For more information check chapter UPDATE DEVICE.

2.1.2 Software Graph Resolution

This function allows to modify the software graphic resolution.

Proceed as follows:

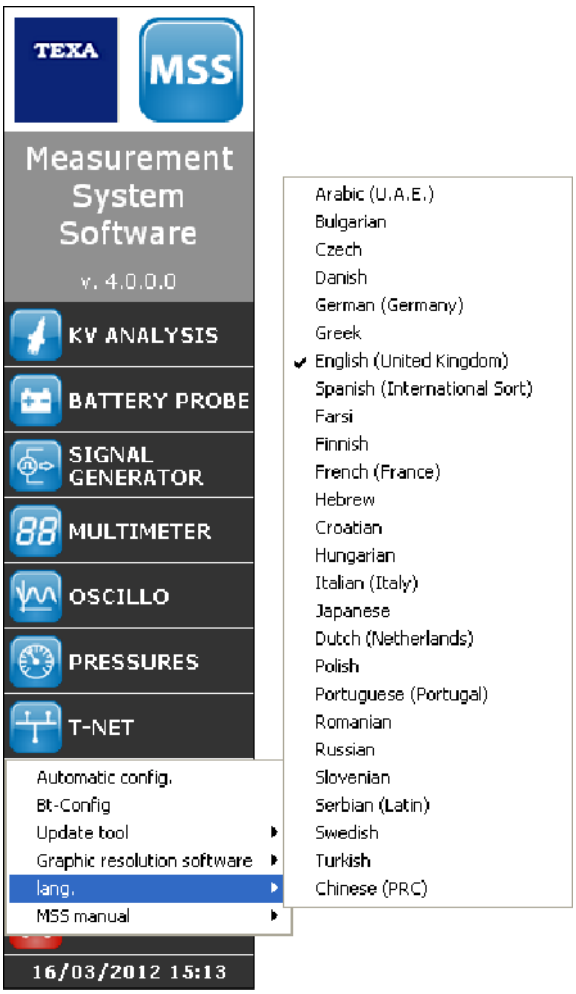
1. Click on item **Software graph resolution**.
2. Select the desired video resolution.

2.1.3 Language

Allows you to change the language in which the software is displayed.

Proceed as follows:

1. Click on item **Language**.
2. Select the language desired.

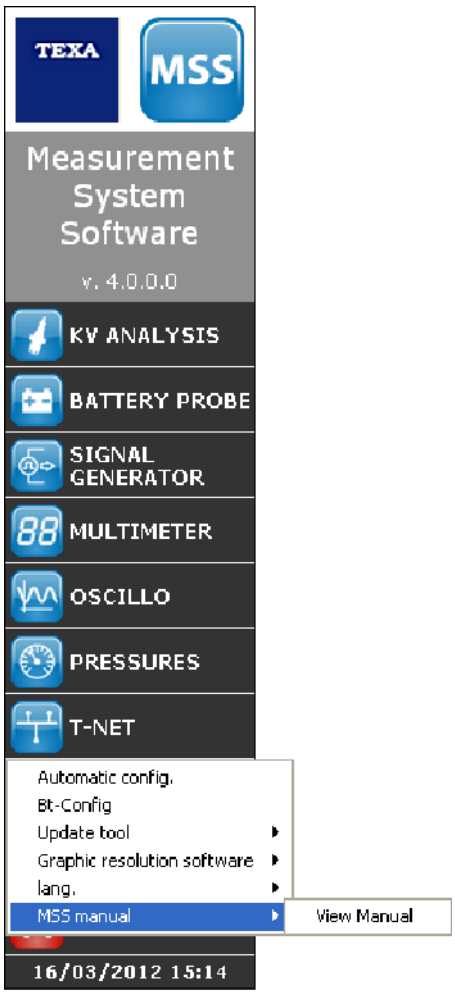


2.1.4 MSS Manual

This function allows you to view the software manual.

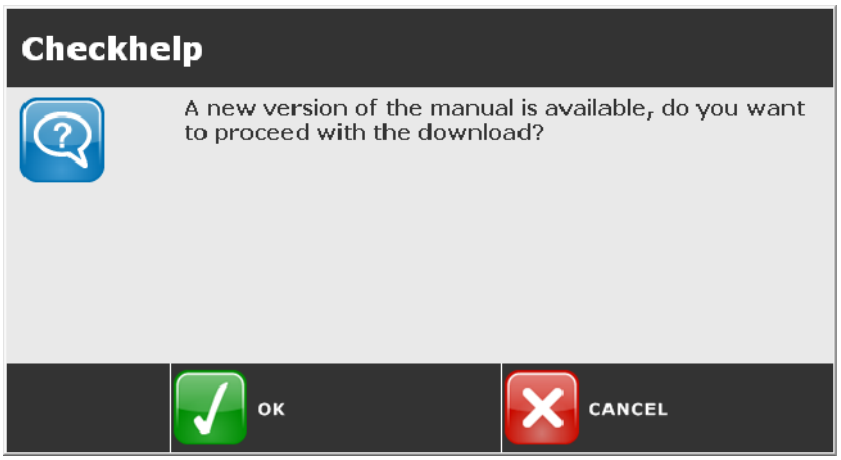
Proceed as follows:

1. Click on item **MSS manual**.
2. Click on item **Display manual**.



Connecting to the Internet allows the function to check if an updated version of the manual is available.

3. Click on .



The software manual is displayed.

3 CHARGE START

This function allows you to verify the efficiency of the electrical components involved in the engine ignition phase (starter motor) and of the battery charging (alternator) and the efficiency of the battery itself.

This function is not compatible with 24 V power supply systems.

The function allows you to carry out the following tests:

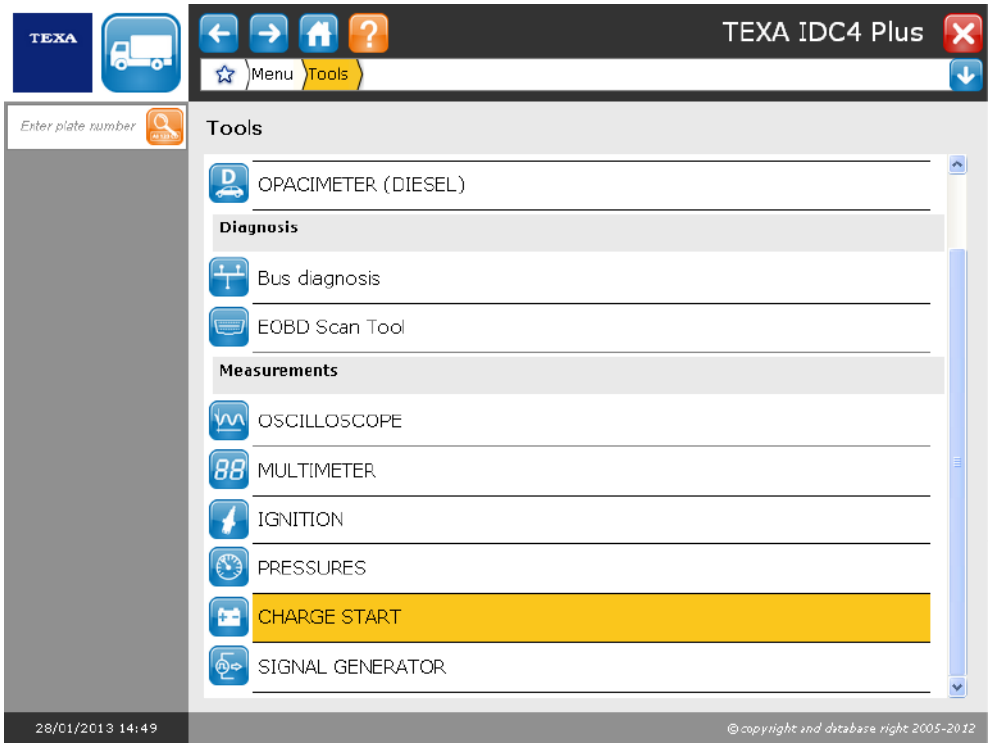
- *Battery Test.*
- *System Charge.*
  - *Charge Efficiency.*
  - *Charge Cable.*
  - *Ripple Output ALT+.*
  - *Ripple Output D+.*
- *Start System.*
  - *Start Test.*
  - *Engine Ground Test.*
  - *Starter Motor + Test.*

The function can be launched from the **Tools** menu or after carrying out a complete selection.

In order to store the performed tests, you must access the function from the vehicle selection.

To launch the function from the Tools menu, proceed as follows:

1. Click  .



The test selection screen is displayed.

Icons	Name	Description	Notes
	Battery Test	It allows you to verify the efficiency status of the battery.	--
	System Charge	It allows you to verify the alternator's operation through voltage and current tests.	--
	Start System	It allows you to verify the operation of the engine ignition system through voltage and current tests.	--
	Result Summary	It allows you to view, store and print the results of the performed tests.	--

3.1 Battery Test

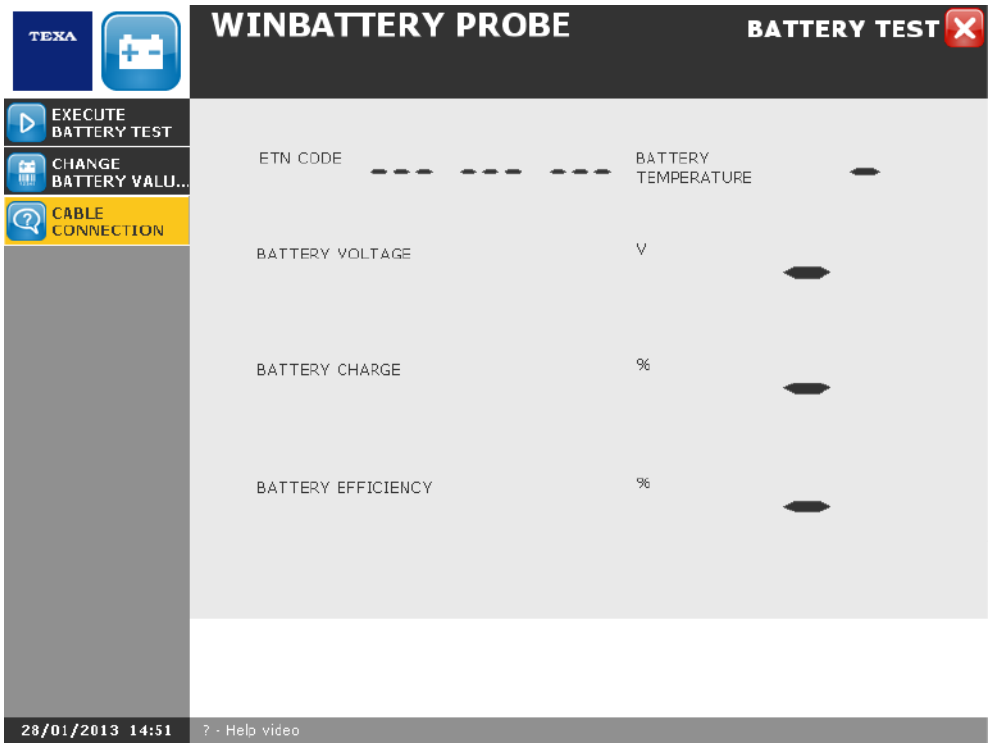
This function allows you to verify the efficiency status of the battery.

In order to carry out this test, you need the following material:

- *Device.*
- *BPP Cable.*

Proceed as follows:

1. Click  .



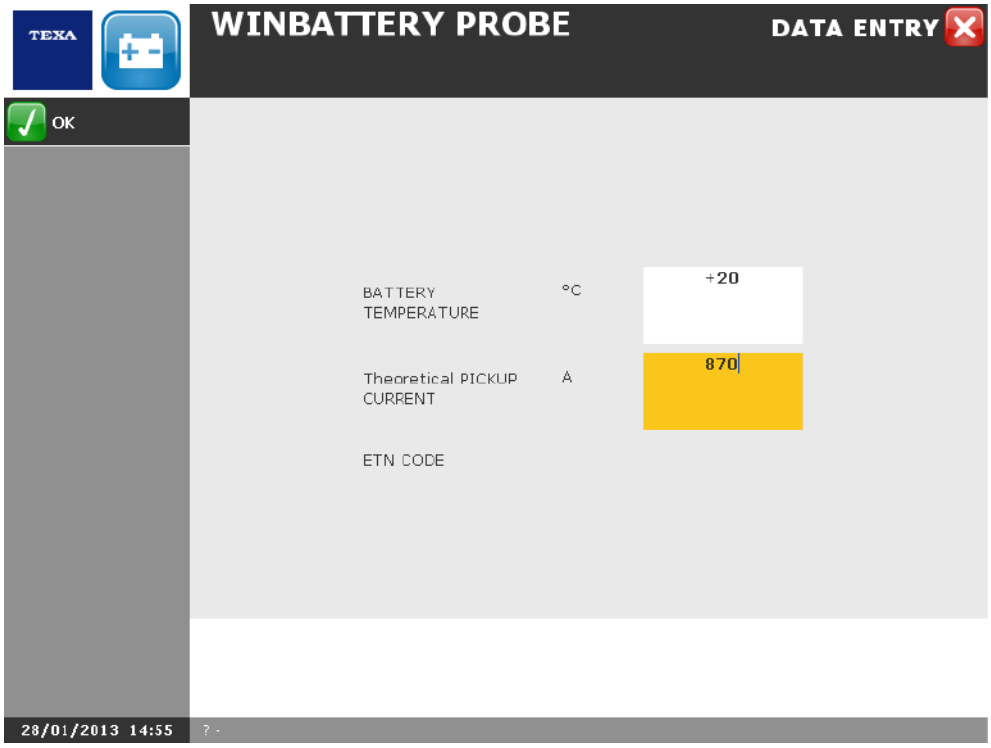
Icons	Name	Description	Notes
	Execute Battery Test	It allows you to launch the test.	Before launching the test, make sure the cables are connected as indicated in the video that can be started from the function **Cable Connection**.
	Change Battery Values	It allows you to change the data regarding the features of the battery with respect to the previous test.	The accuracy of the data is essential, since it could jeopardize the validity if the test that will be carried out.
	Cable Connection	It allows you to launch a video regarding the connections that must be done.	--

3.1.1 Change Battery Values

This function allows you to change the data regarding the battery.

Proceed as follows:

1. Click  .
2. Enter the data in the specific fields.
3. Click  .



The data that is required is generally printed on the sticker located on the battery.

ETN is the acronym for European Type Number, a 9 digit code that indicates the electrical features and the dimensions of the battery.

For example, the structure of ETN 543 110 033 is the following:

- *543 group A.*
- *110 group B.*
- *033 group C.*

Group A indicates the battery's capacity and voltage.

- *All the numbers above 500 indicate 12 V power supply batteries.*
- *All the numbers below 500 indicate 6 V power supply batteries.*

In order to learn the battery's capacity, you must subtract 500 from the number in group A: 543-500=43, therefore 43 Ah.

Group B represents the geometrical features of the battery, other than indicating its polarity, the type of terminal, etc.

Group C, multiplied by 10, indicates the starting current according to the EN regulations: 033x10=330, therefore 330 A EN.

3.1.2 Execute Battery Test

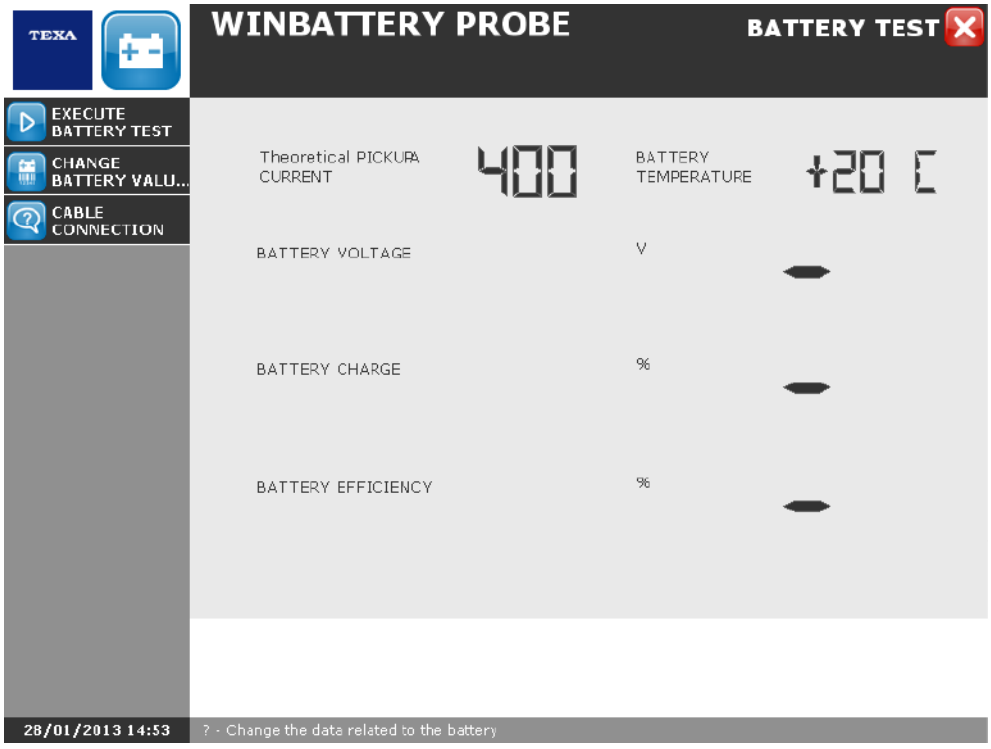
This function allows you to launch the test.

Before launching the test, we recommend you let the battery rest for at least 6 hours.

If this is not possible, follow the **Procedure for Testing a non-Rested Battery**.

Proceed as follows:

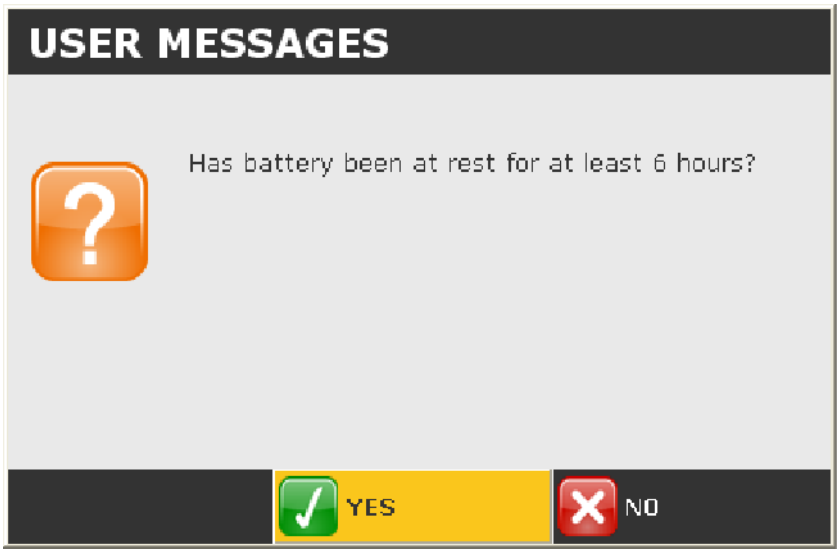
1. Click  .



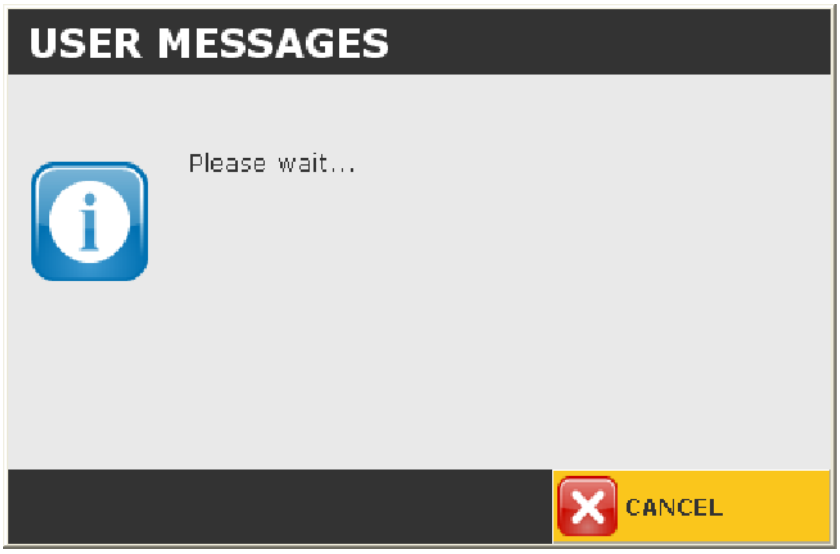
PROCEDURE FOR TESTING A BATTERY AT REST FOR AT LEAST 6 HOURS

Proceed as follows:

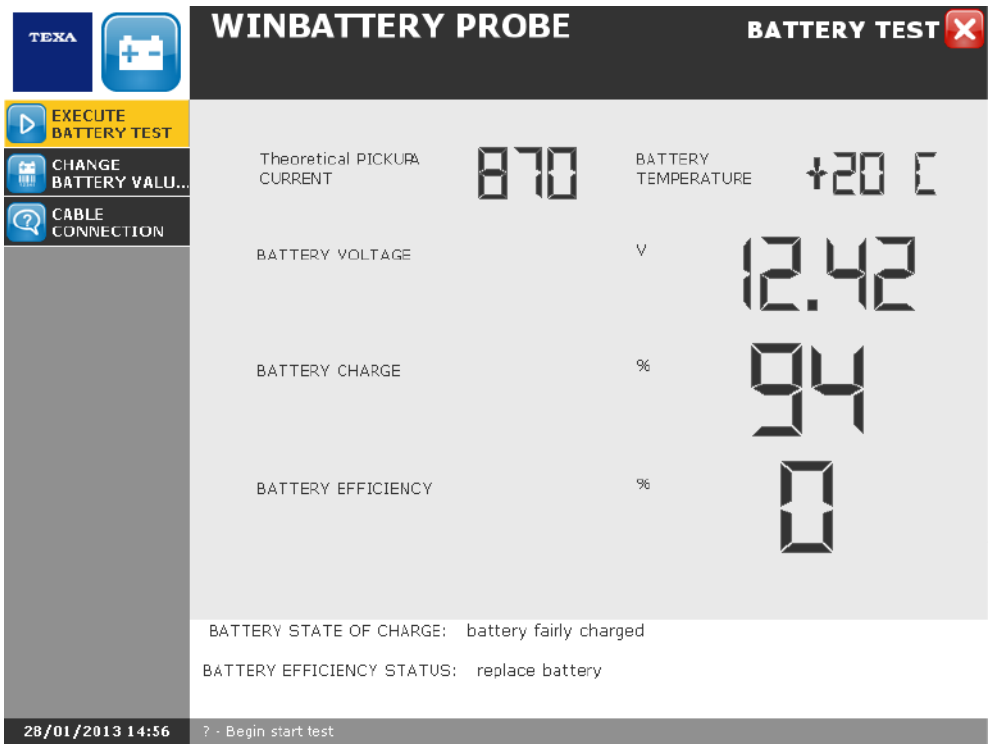
1. Click  .



Wait for the test setup.



The test result is displayed.



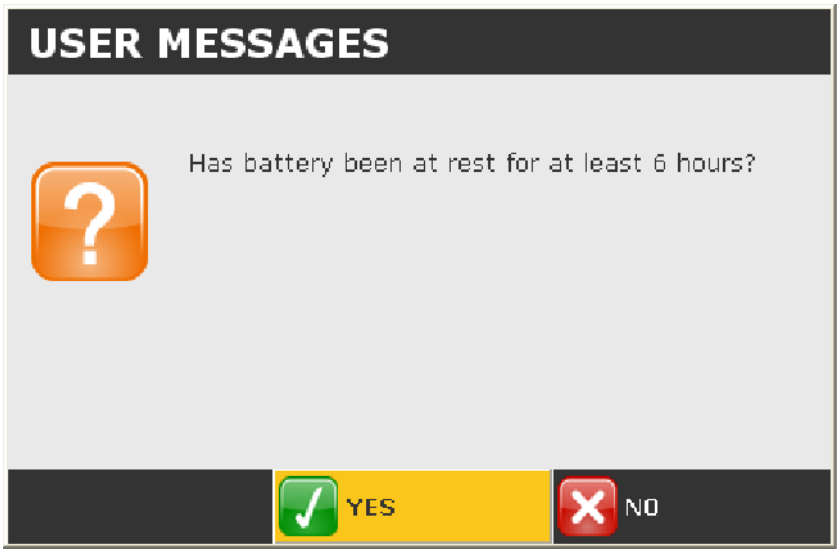
The screen provides the following information:

- *Theoretical pickup current (previously entered by the user).*
- *Battery temperature (previously entered by the user).*
- *Detected battery voltage.*
- *Battery charge.*
- *Battery efficiency.*
- *Battery state of charge.*
- *Battery efficiency status.*

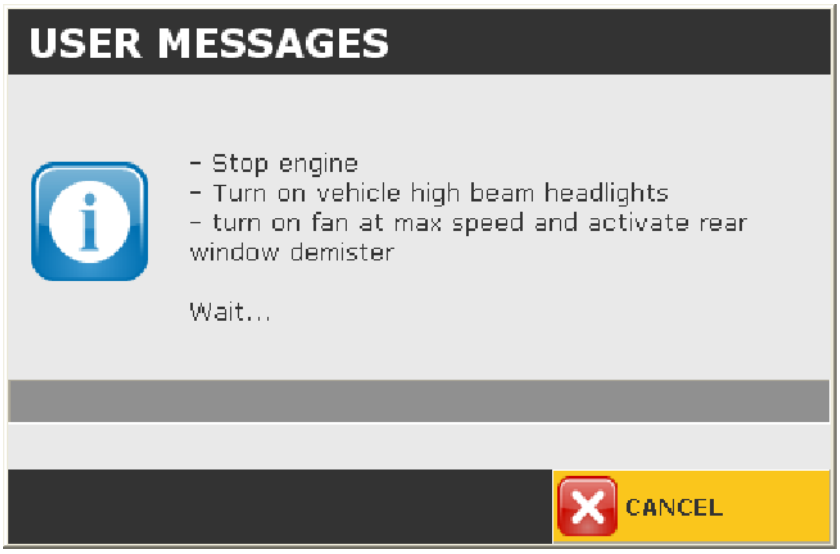
PROCEDURE FOR TESTING A NON-RESTED BATTERY

Proceed as follows:

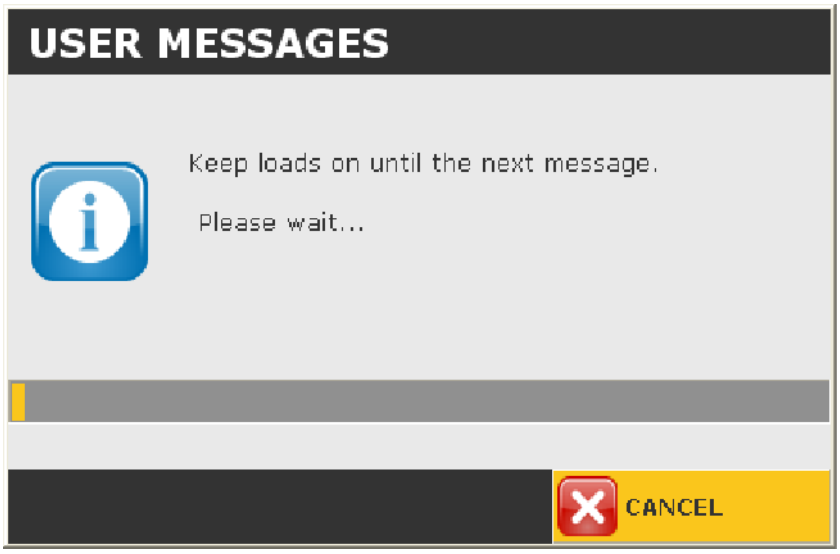
1. Click  .



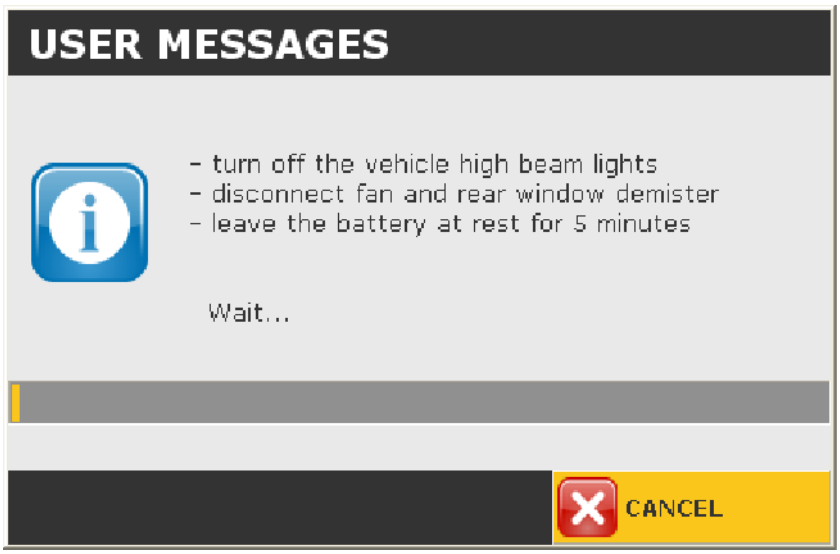
2. Follow the instructions that appear on the screen.



Wait for the following screen to appear.

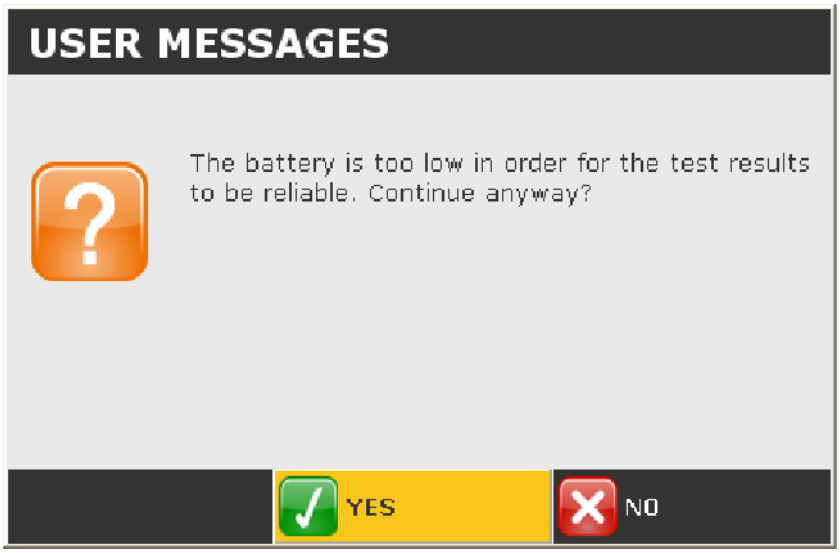


3. Follow the instructions that appear on the screen.

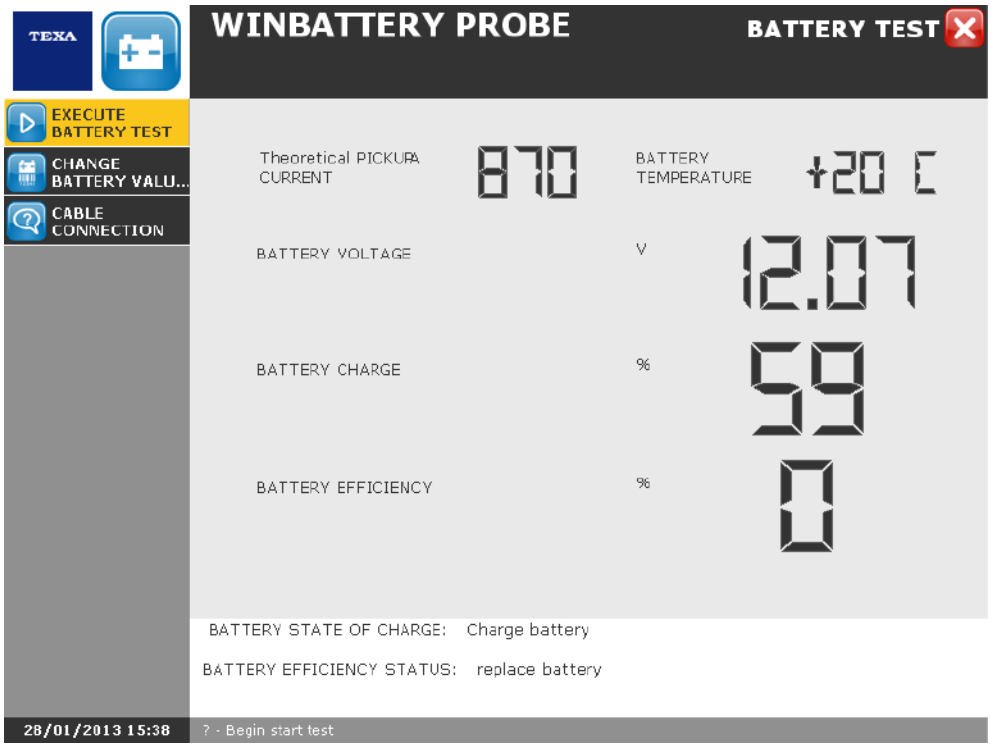


The test results could be unreliable if the battery is too low.

4. Click  .



The test result is displayed.



The screen provides the following information:

- *Theoretical pickup current (previously entered by the user).*
- *Battery temperature (previously entered by the user).*
- *Detected battery voltage.*
- *Battery charge.*
- *Battery efficiency.*
- *Battery state of charge.*
- *Battery efficiency status.*

3.2 System Charge

This function allows you to verify the alternator's operation through voltage and current tests.

Proceed as follows:

1. Click  .

Icons	Name	Description	Notes
	Charge Efficiency	It allows you to launch the efficiency test of the battery's charging system.	--
	Charge Cable	It allows you to launch the operation test of the connection cable from alternator's B+ to the battery's positive.	--
	Ripple Output ALT+	It allows you to launch the operation test of the diode bridge used to rectify the current generated by the alternator (alternator's B + output).	--
	Ripple Output D+	It allows you to launch the operation test of the diode bridge of alternator's output D+ in order to verify the correct management of the charging warning light of the alternator itself.	--

3.2.1 Charge Efficiency

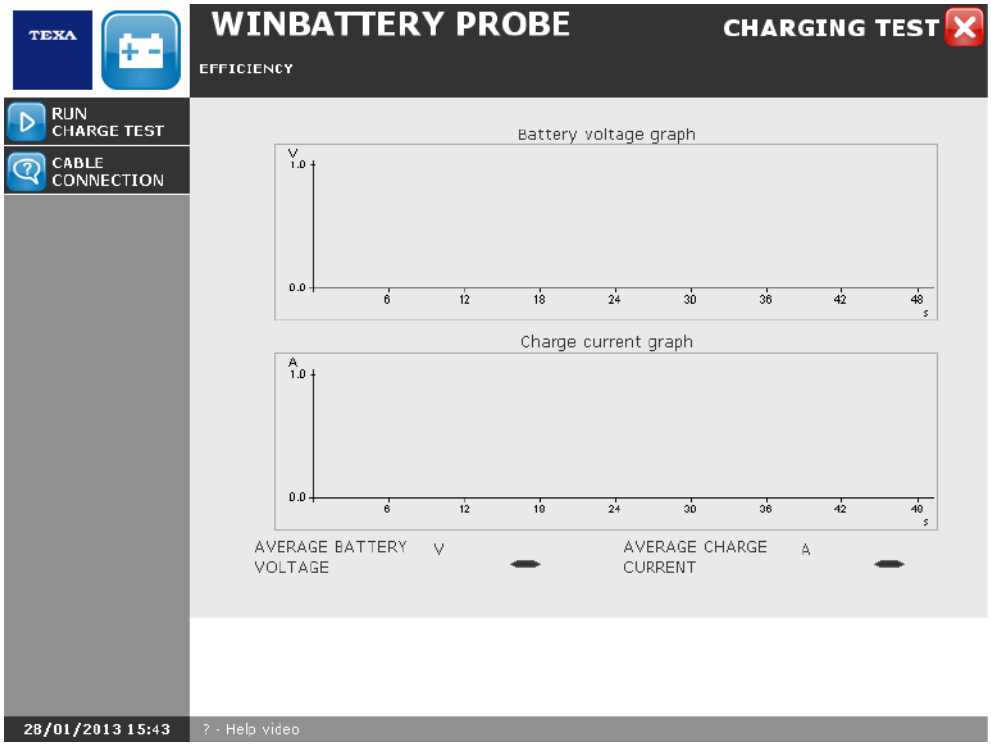
This function allows you to launch the efficiency test of the battery's charging system.

In order to carry out this test, you need the following material:

- *Device.*
- *BPP Cable.*
- *BICOR amperometric clamp.*

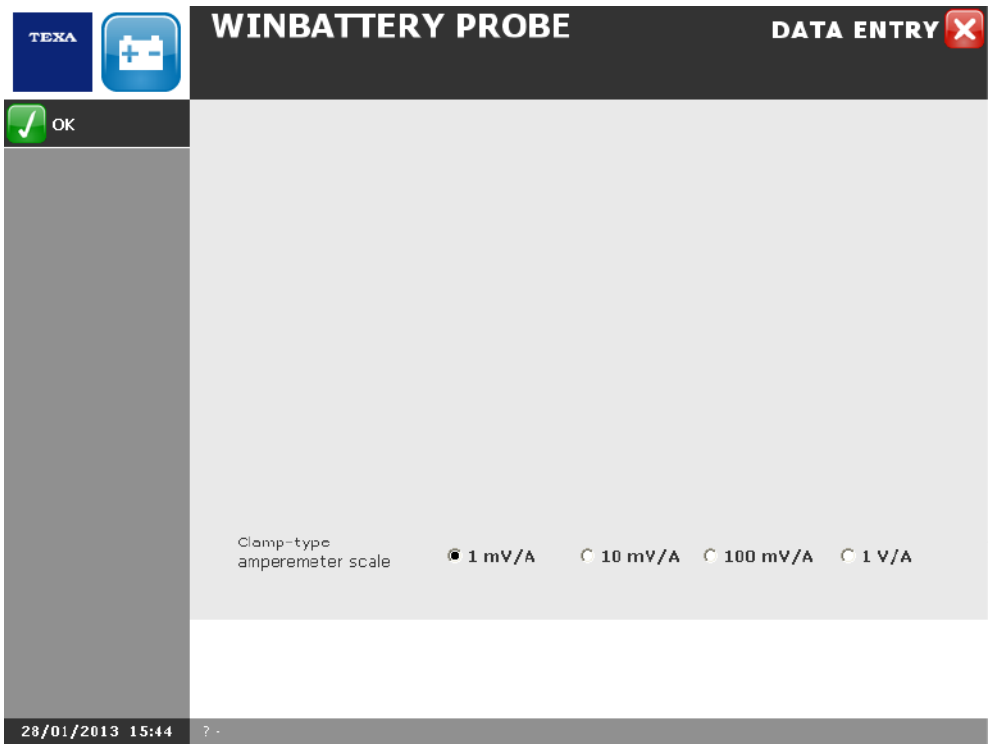
Proceed as follows:

1. Click  .

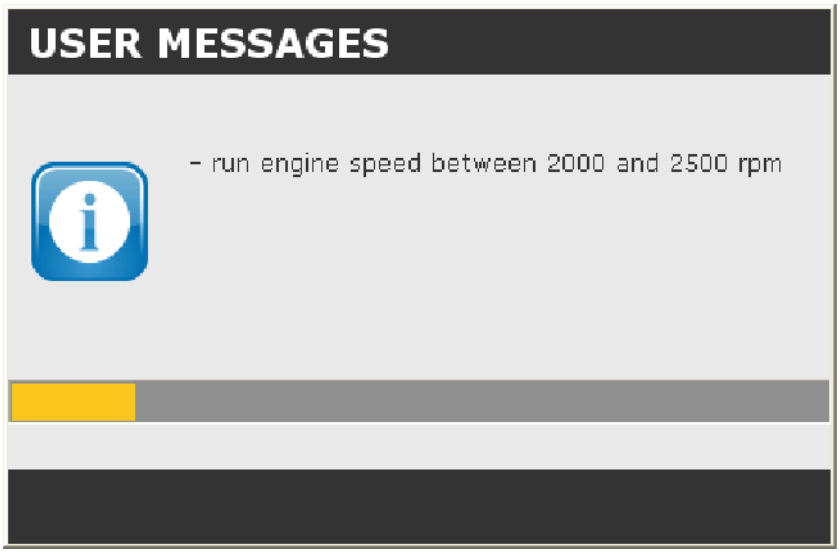


Icons	Name	Description	Notes
	Run Charge Test	It allows you to launch the test.	--
	Cable Connection	It allows you to launch a video regarding the connections that must be done.	--

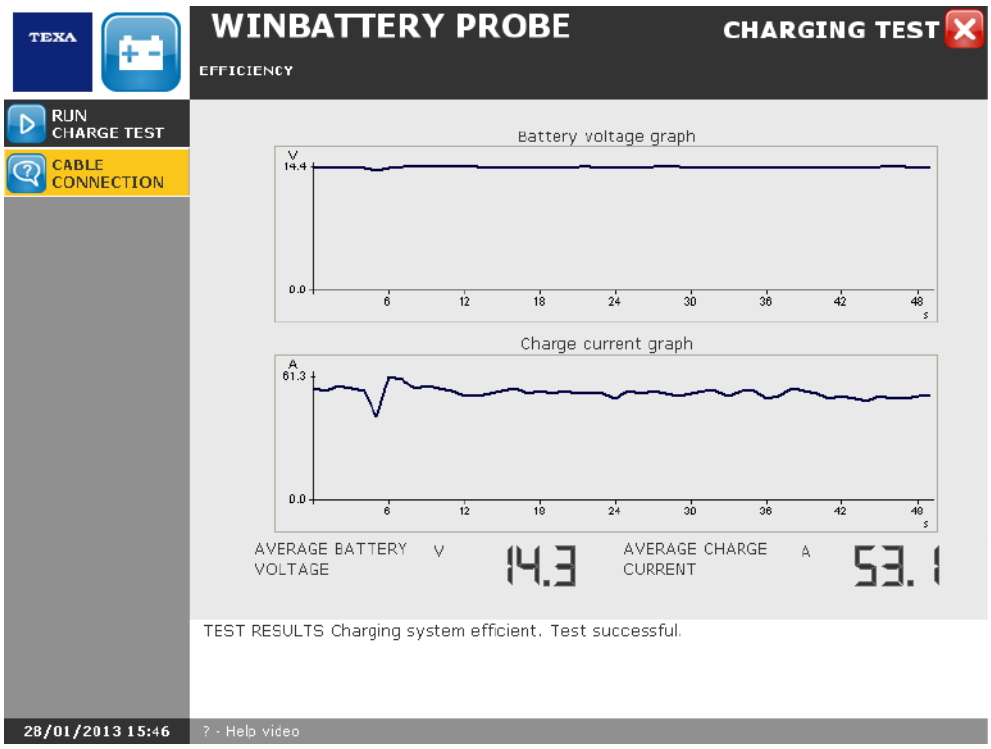
2. Click  .
3. Click  .
4. Select the ammeter scale.
5. Click  .



6. Follow the instructions that appear on the screen.



The test result is displayed.



The screen provides the following information:

- *Battery voltage graph.*
- *Charge current graph.*
- *Average battery voltage.*
- *Average charge current.*
- *Test result.*

3.2.2 Charge Cable

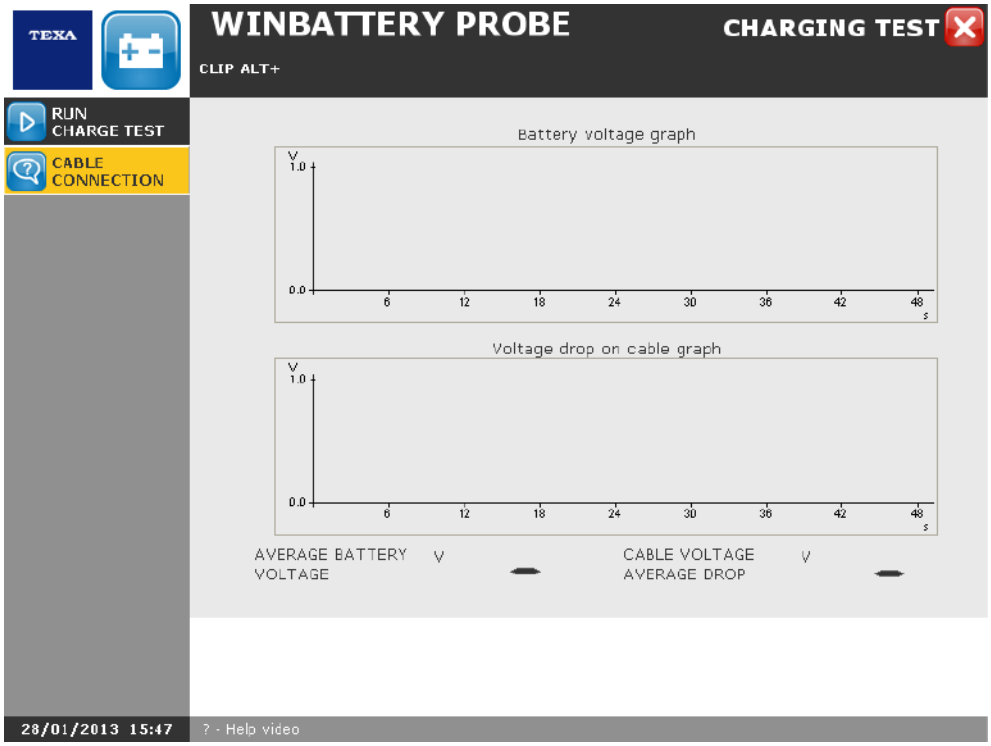
This function allows you to launch the operation test of the connection cable from alternator's B+ to the battery's positive.

In order to carry out this test, you need the following material:

- *Device.*
- *BPP Cable.*
- *+ALT Cable.*

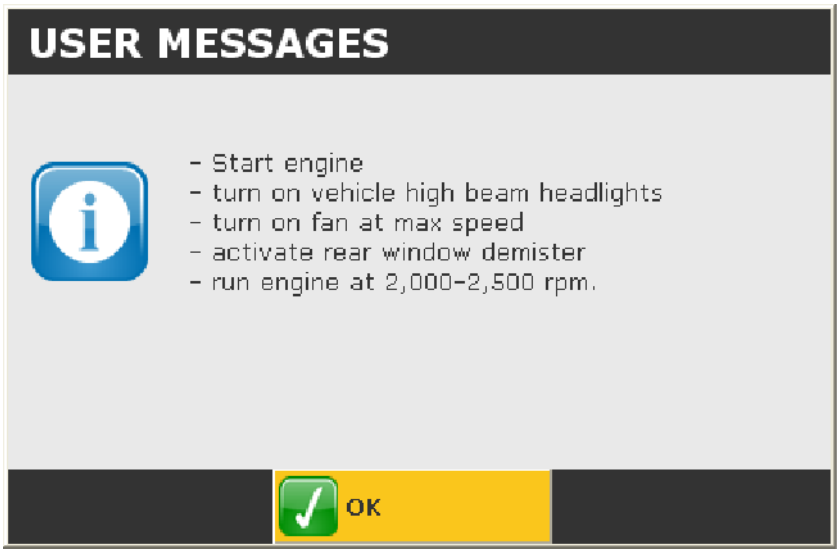
Proceed as follows:

1. Click  .

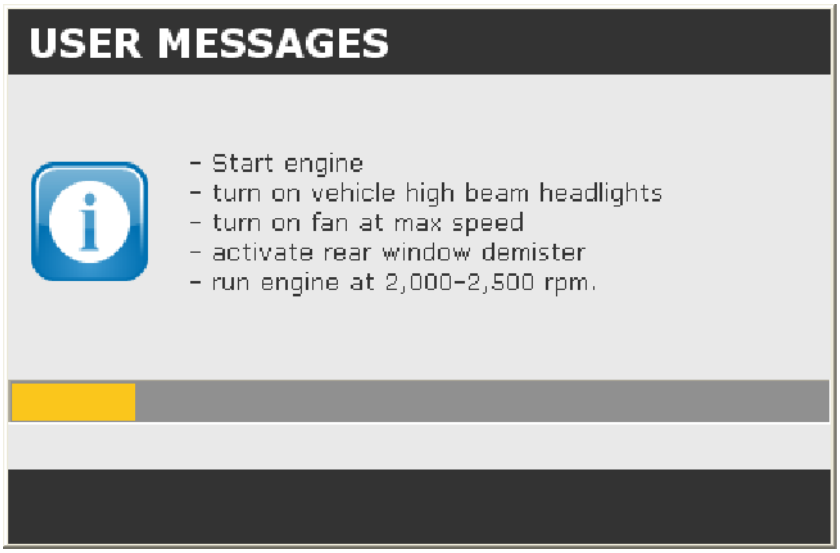


Icons	Name	Description	Notes
	Run Charge Test	It allows you to launch the test.	--
	Cable Connection	It allows you to launch a video regarding the connections that must be done.	--

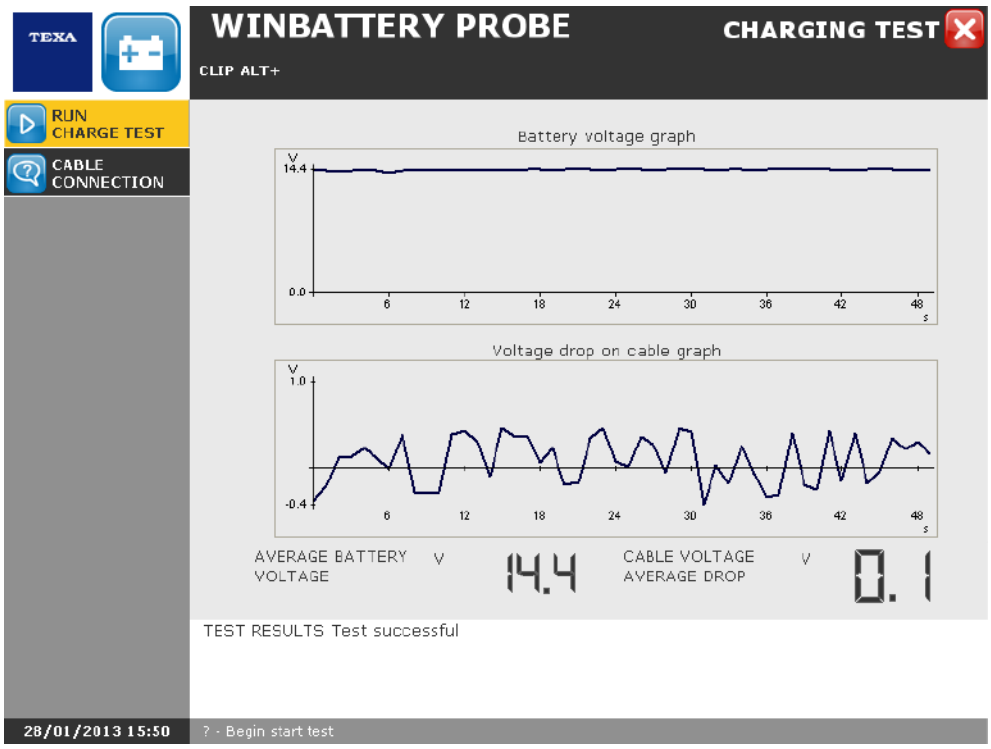
2. Click .
3. Click .
4. Follow the instructions that appear on the screen.
5. Click .



6. Follow the instructions that appear on the screen.



The test result is displayed.



The screen provides the following information:

- *Battery voltage graph.*
- *Voltage drop on cable graph.*
- *Average battery voltage.*
- *Charge voltage average drop.*
- *Test result.*

3.2.3 Ripple Output ALT+

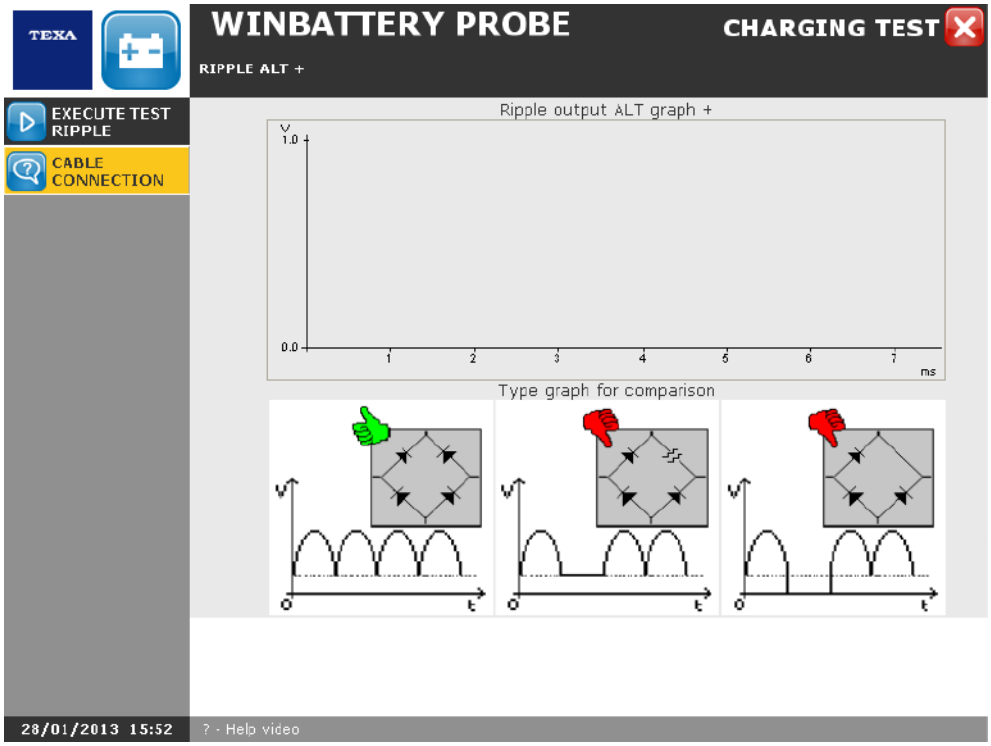
This function allows you to launch the operation test of the diode bridge used to rectify the current generated by the alternator (alternator's B+ output).

In order to carry out this test, you need the following material:

- *Device.*
- *BPP Cable.*
- *+ALT Cable.*

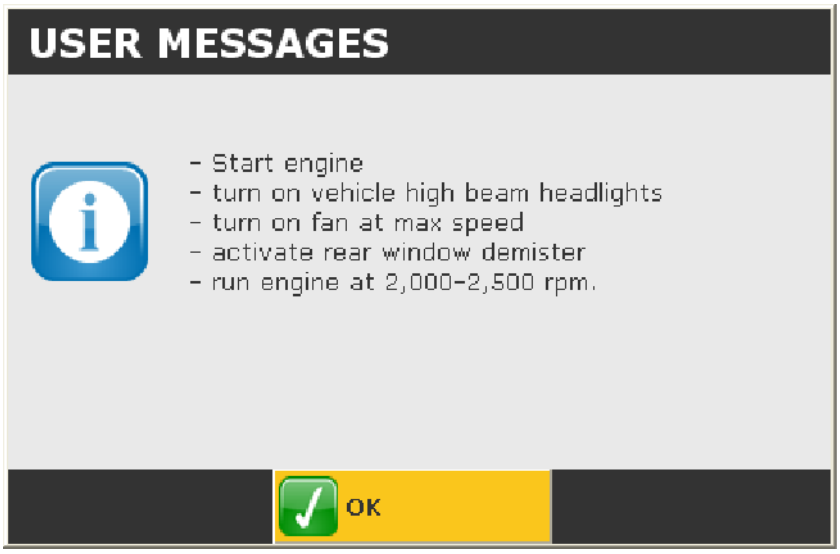
Proceed as follows:

1. Click  .

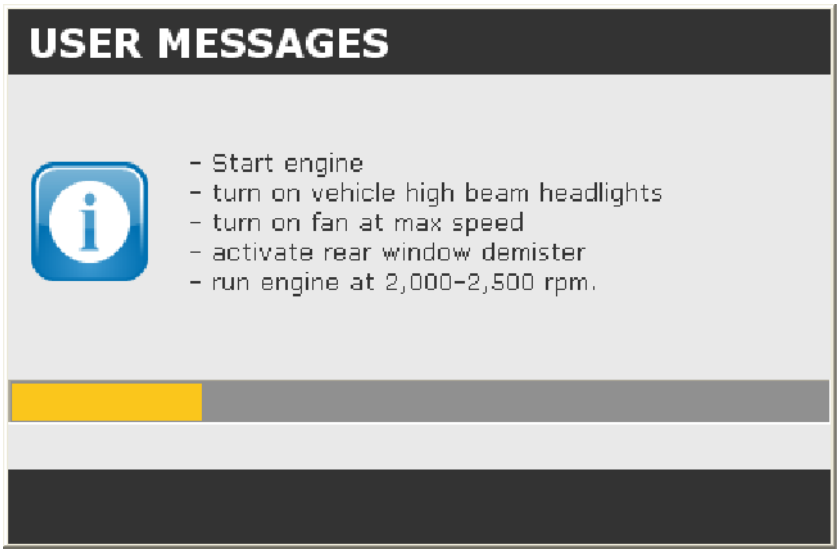


Icons	Name	Description	Notes
	Execute Ripple Test	It allows you to launch the test.	--
	Cable Connection	It allows you to launch a video regarding the connections that must be done.	--

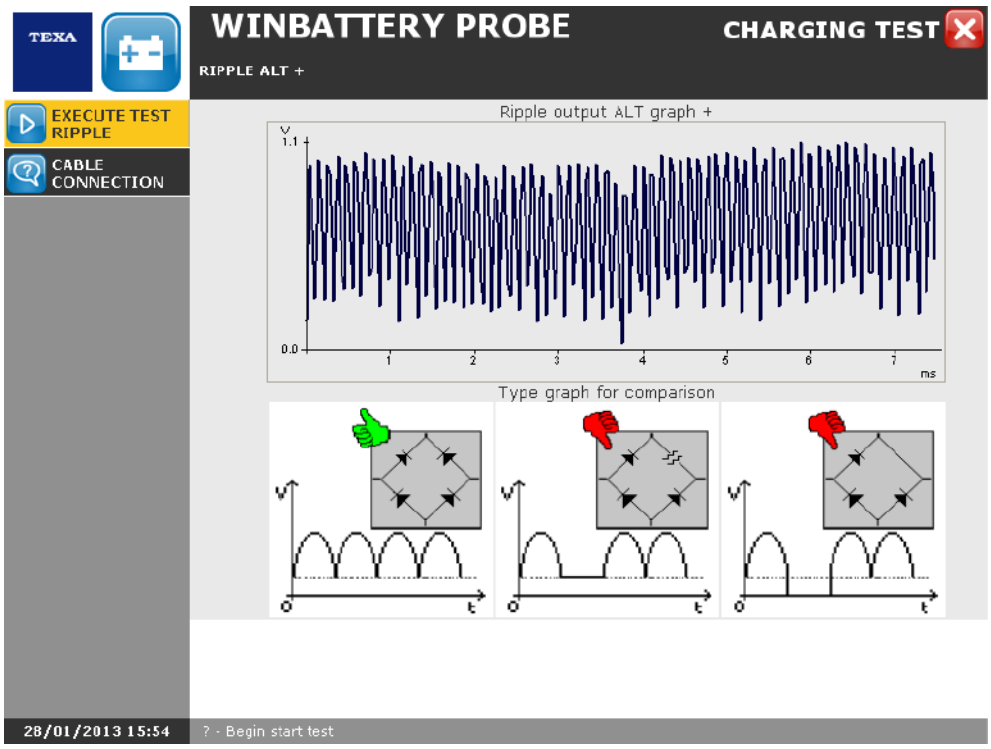
2. Click  .
3. Click  .
4. Follow the instructions that appear on the screen.
5. Click  .



6. Follow the instructions that appear on the screen.



The test result is displayed.



The screen provides the following information:

- *Ripple output ALT+ graph.*
- *Type graph for comparison.*

3.2.4 Ripple Output D+

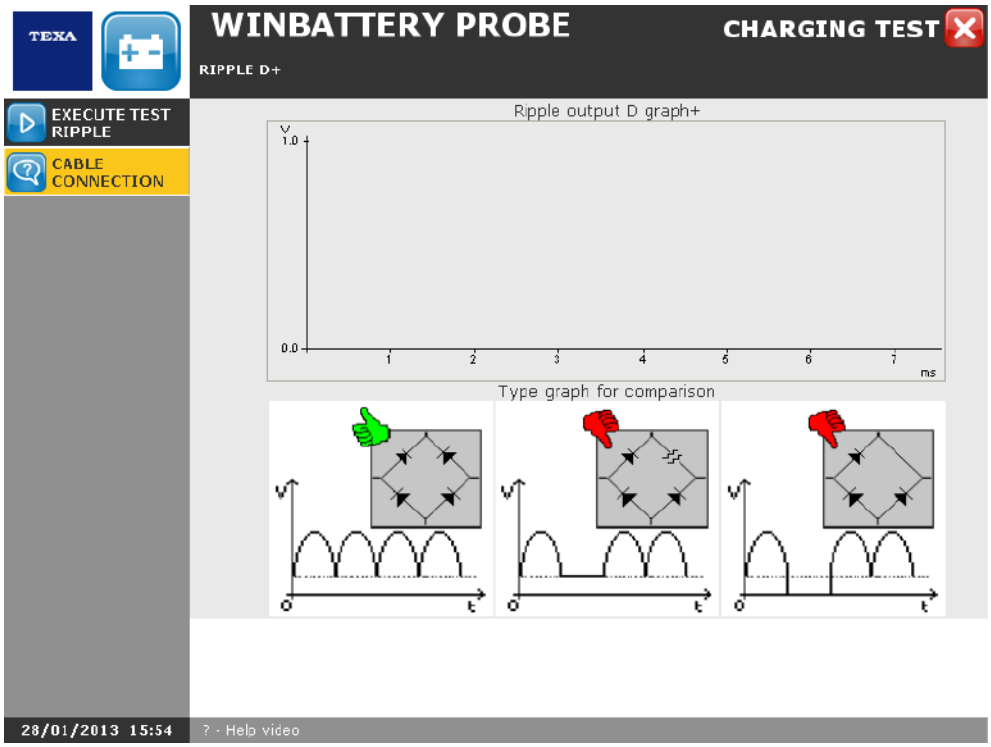
This function you to launch the operation test of the diode bridge of alternator's output D+ in order to verify the correct management of the charging warning light of the alternator itself.

In order to carry out this test, you need the following material:

- *Device.*
- *BPP Cable.*
- *+D Cable.*

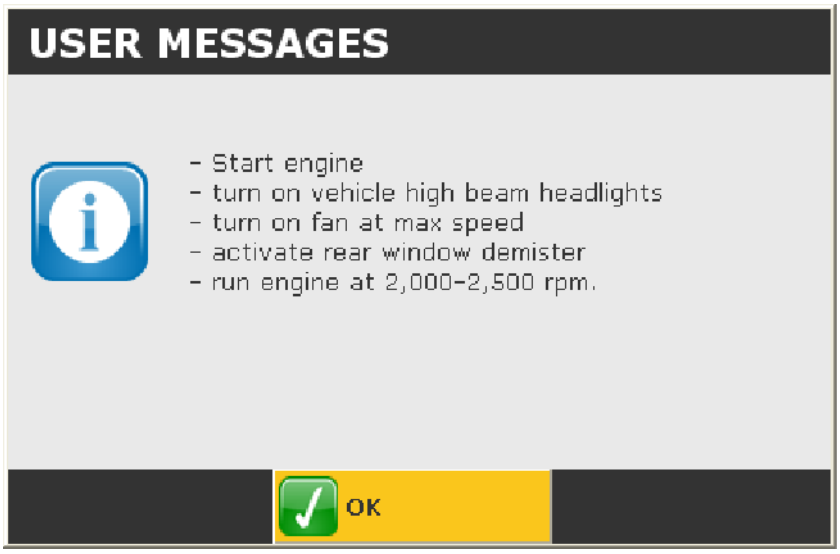
Proceed as follows:

1. Click  .

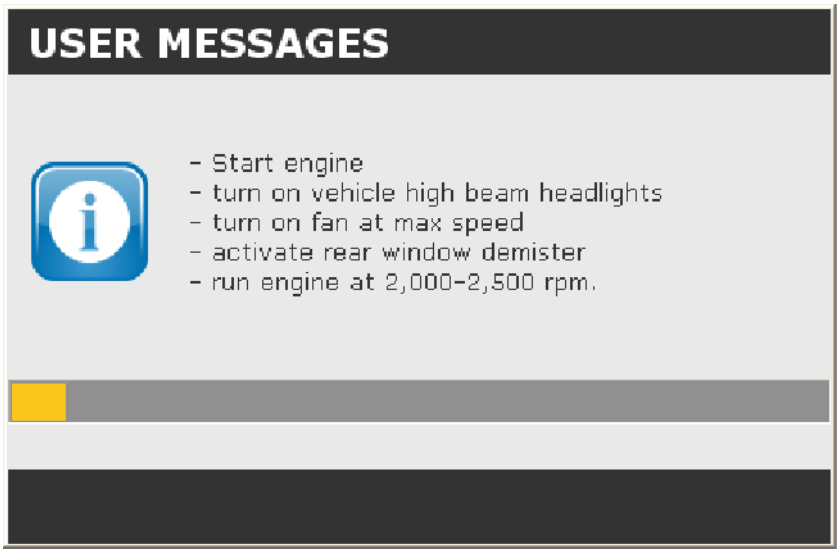


Icons	Name	Description	Notes
	Execute Ripple Test	It allows you to launch the test.	--
	Cable Connection	It allows you to launch a video regarding the connections that must be done.	--

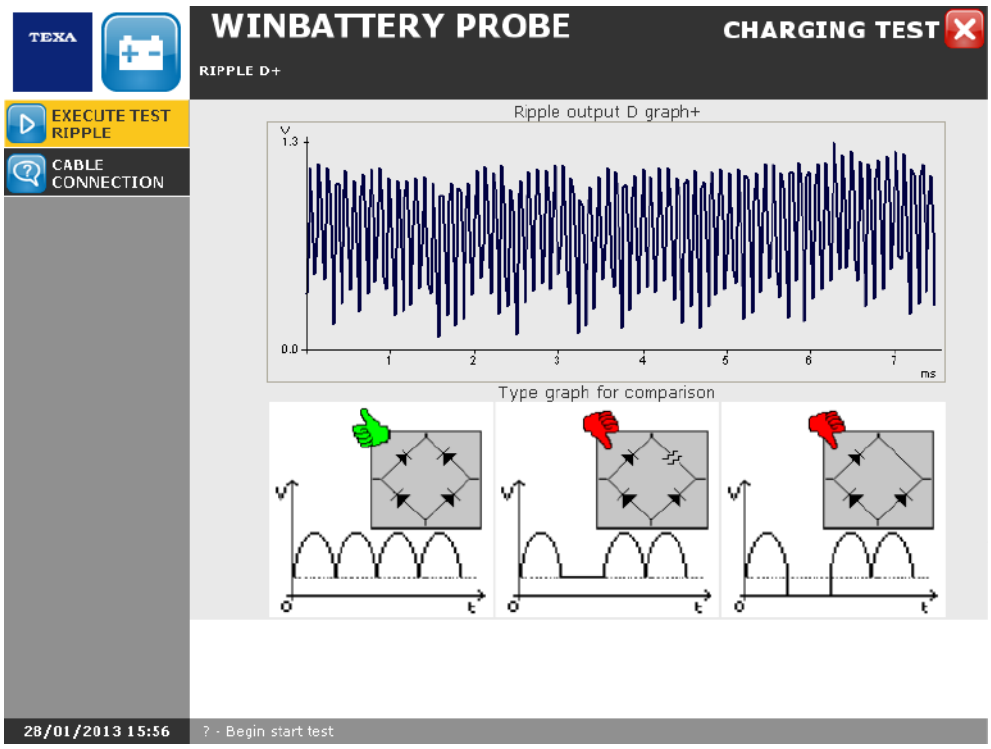
2. Click .
3. Click .
4. Follow the instructions that appear on the screen.
5. Click .



6. Follow the instructions that appear on the screen.



The test result is displayed.



The screen provides the following information:

- *Ripple output D+ graph.*
- *Type graph for comparison.*

3.3 Start System

This function allows you to verify the operation of the engine ignition system through voltage and current tests.

Proceed as follows:

1. Click  .

Icons	Name	Description	Notes
	Start Test	It allows you to check the voltage and current values during the vehicle ignition phase.	--
	Engine Ground Test	It allows you to check the voltage value at the ends of the engine's ground cable.	--
	Starter Motor + Test	It allows you to check the voltage value of the battery and of the positive cable of the vehicle's starter motor.	--

3.3.1 Start Test

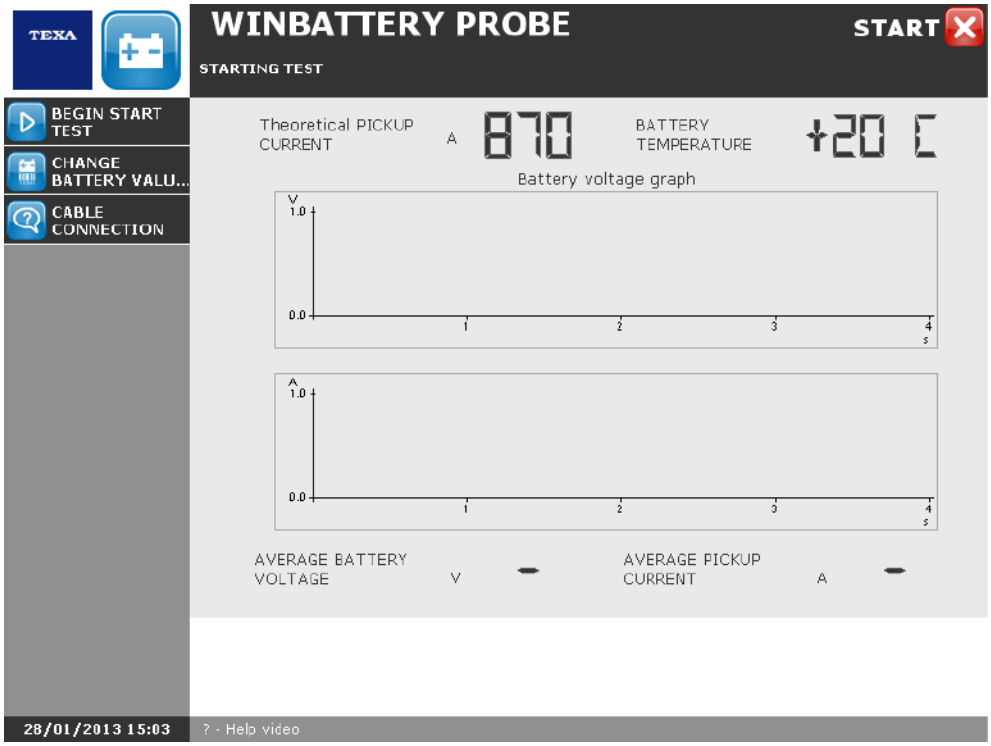
This function allows you to check the voltage and current values during the vehicle ignition phase.

In order to carry out this test, you need the following material:

- *Device.*
- *BPP Cable.*
- *BICOR amperometric clamp.*

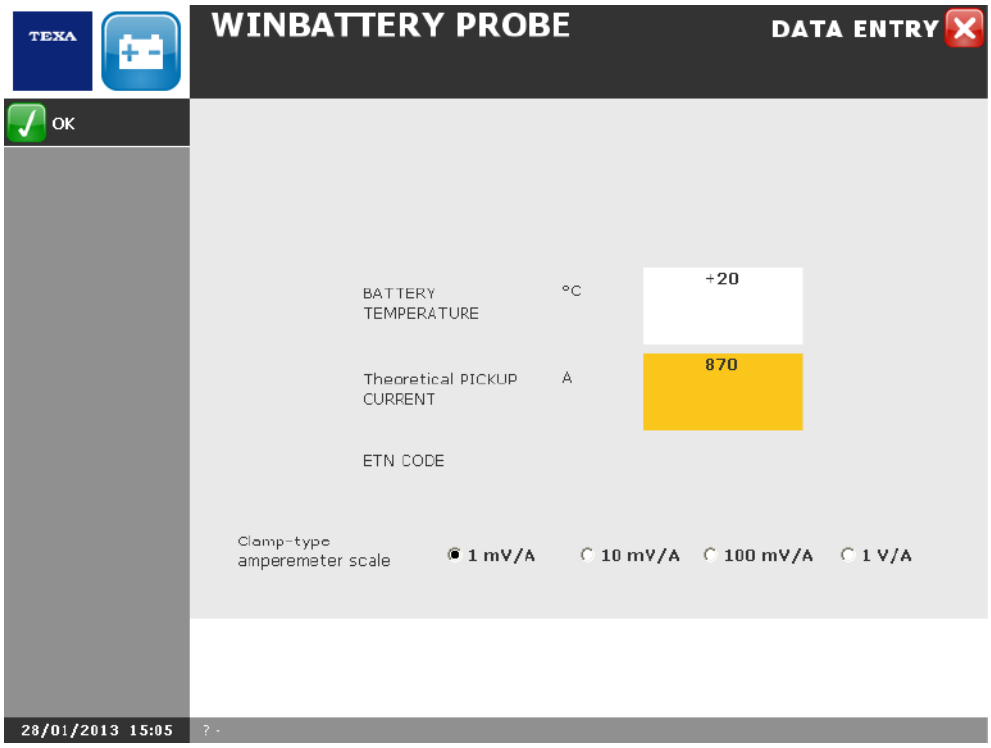
Proceed as follows:

1. Click  .

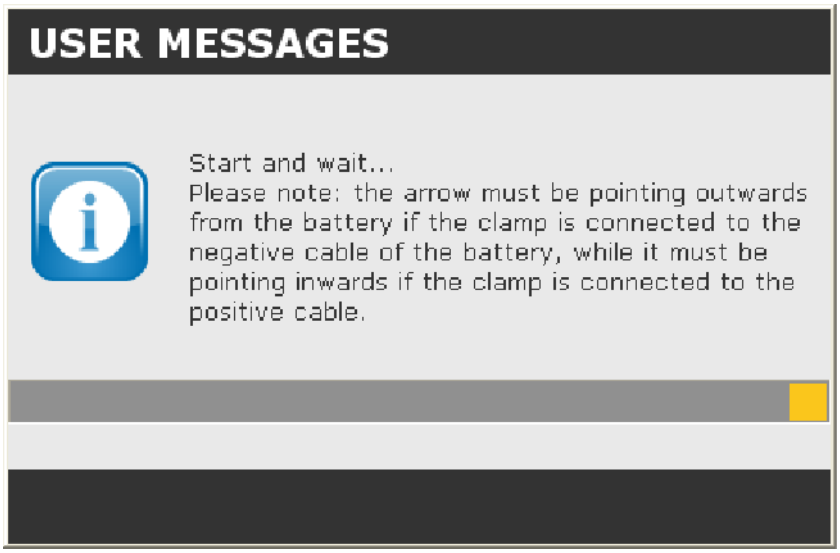


Icons	Name	Description	Notes
	Execute Ripple Test	It allows you to launch the test.	--
	Change Battery Values	It allows you to change the data regarding the battery.	Inputting this data helps obtaining reliable results.
	Cable Connection	It allows you to launch a video regarding the connections that must be done.	--

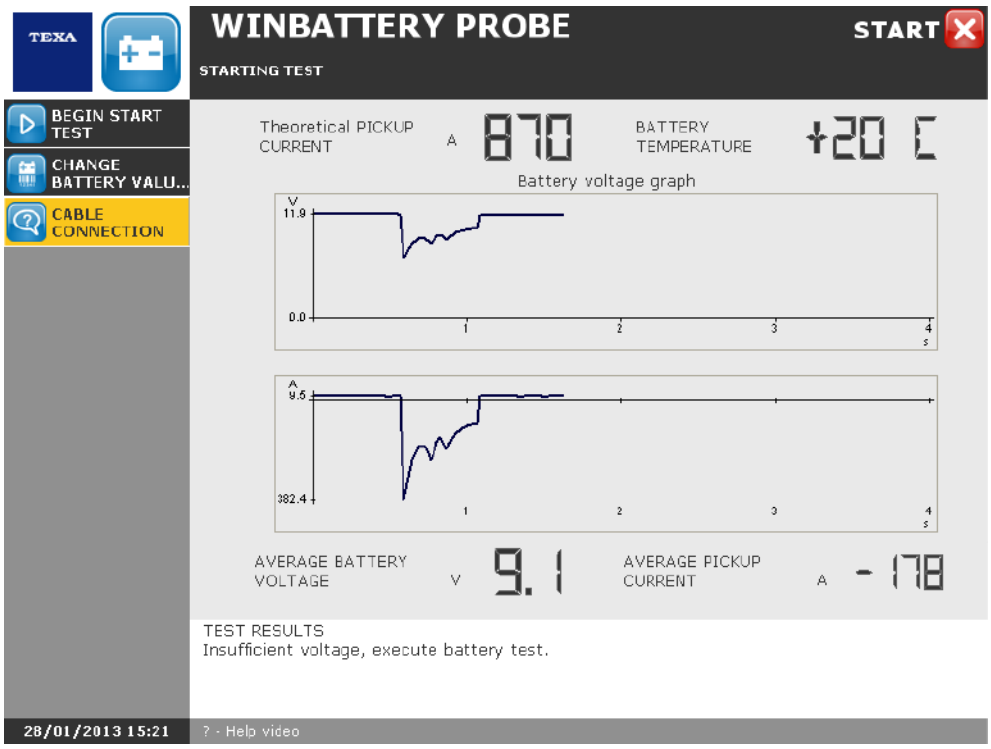
2. Click  .
3. Click  .
4. Enter the data in the specific fields.
5. Select the ammeter scale.
6. Click on  .



7. Follow the instructions that appear on the screen.



The test result is displayed.



The screen provides the following information:

- *Theoretical pickup current (previously entered by the user).*
- *Battery temperature (previously entered by the user).*
- *Battery voltage graph.*
- *Charge current graph.*
- *Average battery voltage.*
- *Average charge current.*
- *Test result.*

3.3.2 Engine Ground Test

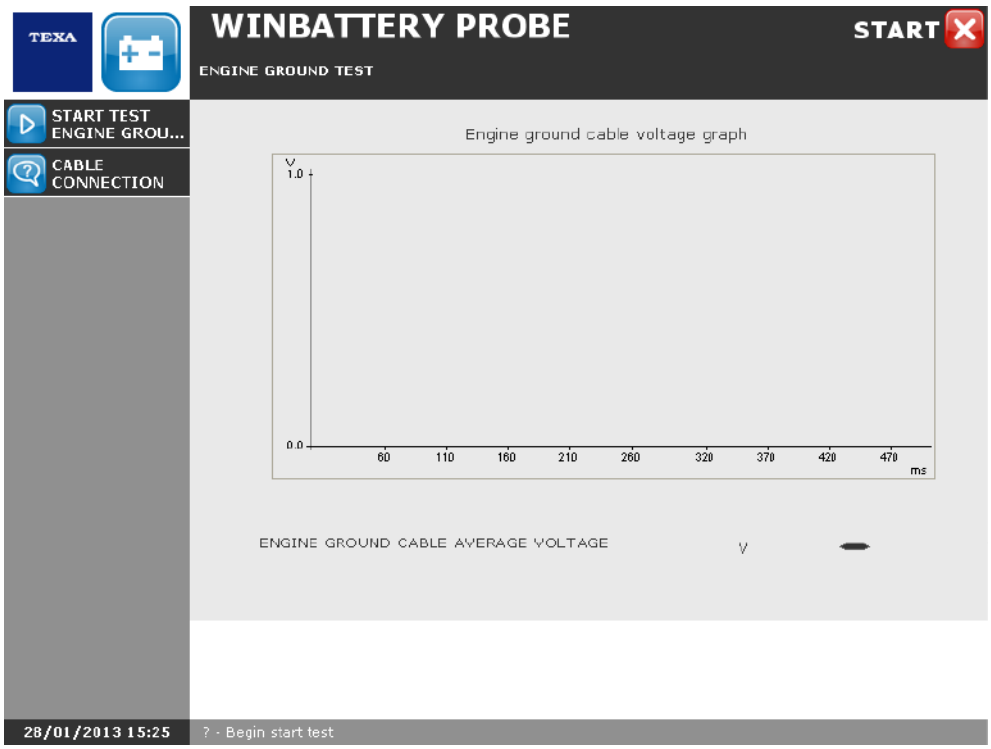
This functions you to check the voltage value at the ends of the engine's ground cable.

In order to carry out this test, you need the following material:

- *Device.*
- *BPP Cable.*
- *-MOT Cable.*
- *BICOR amperometric clamp.*

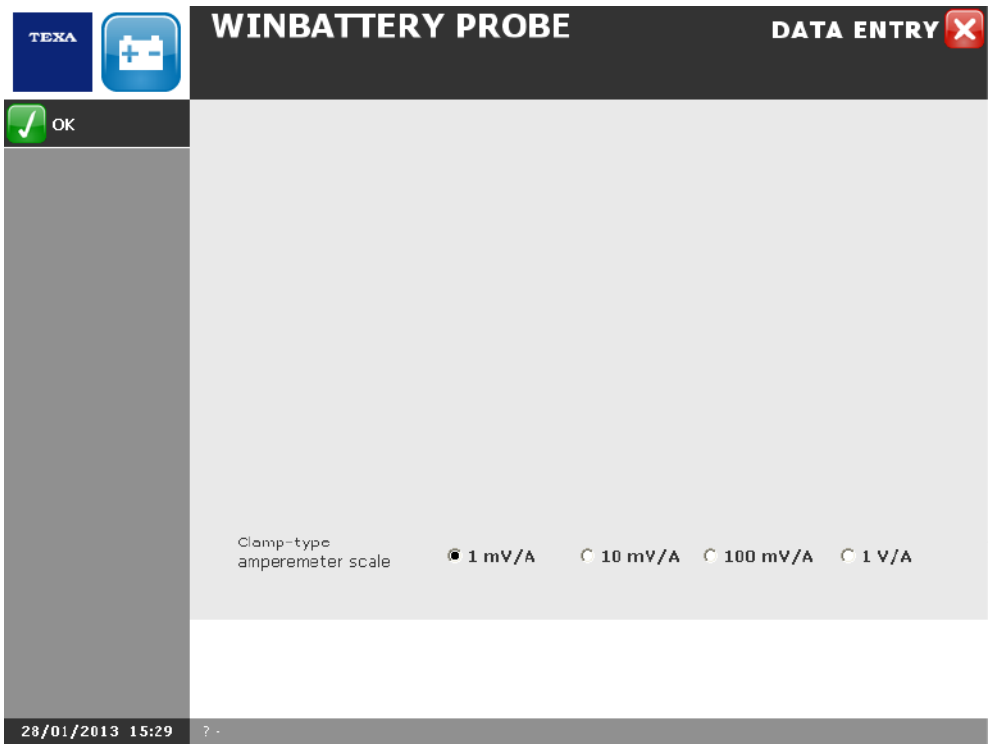
Proceed as follows:

1. Click  .

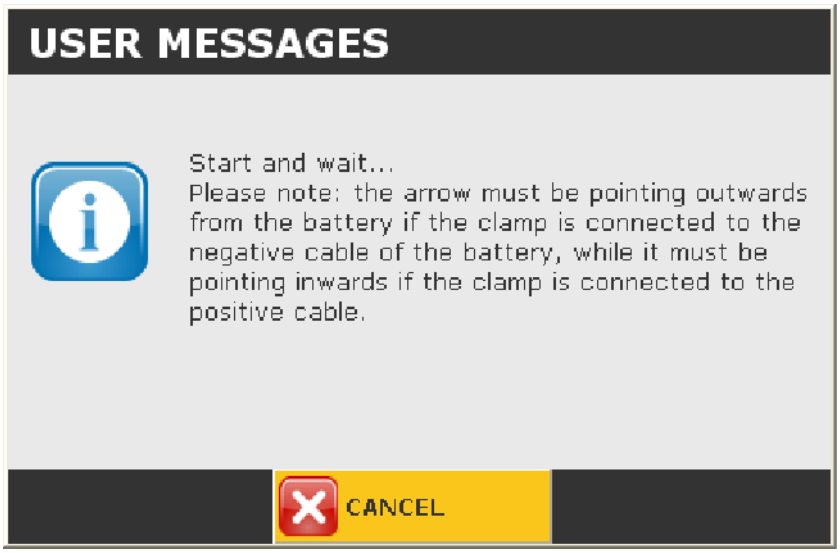


Icons	Name	Description	Notes
	Execute Ripple Test	It allows you to launch the test.	--
	Cable Connection	It allows you to launch a video regarding the connections that must be done.	--

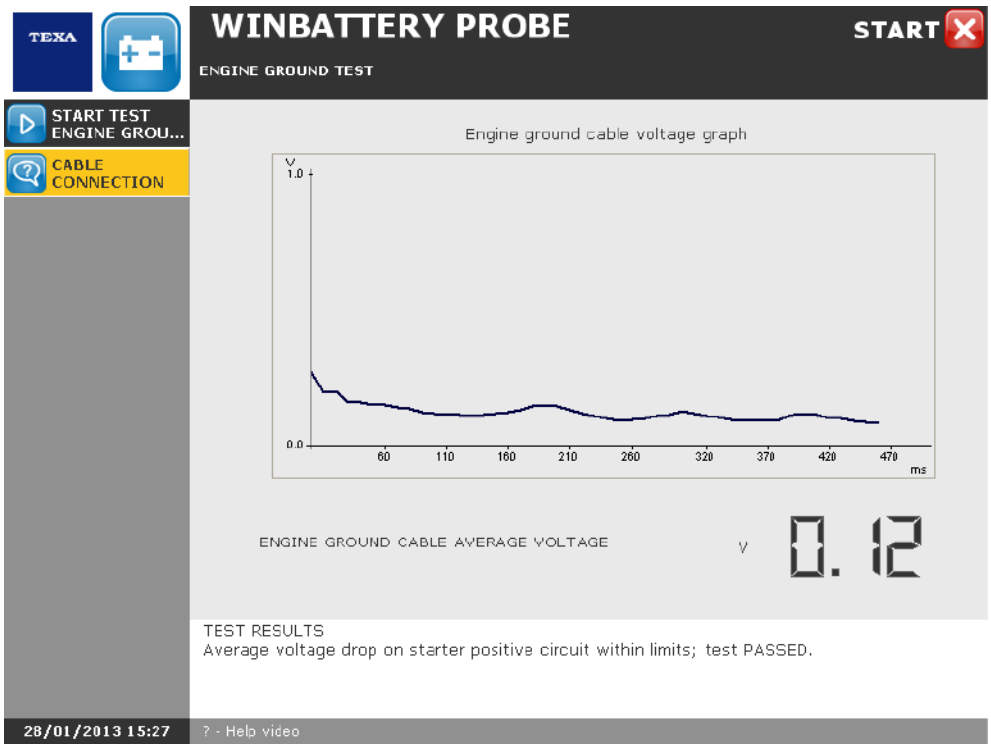
2. Click  .
3. Click  .
4. Select the ammeter scale.
5. Click  .



6. Follow the instructions that appear on the screen.



The test result is displayed.



The screen provides the following information:

- *Engine ground cable voltage graph.*
- *Engine ground cable average voltage.*
- *Test result.*

3.3.3 Starter Motor + Test

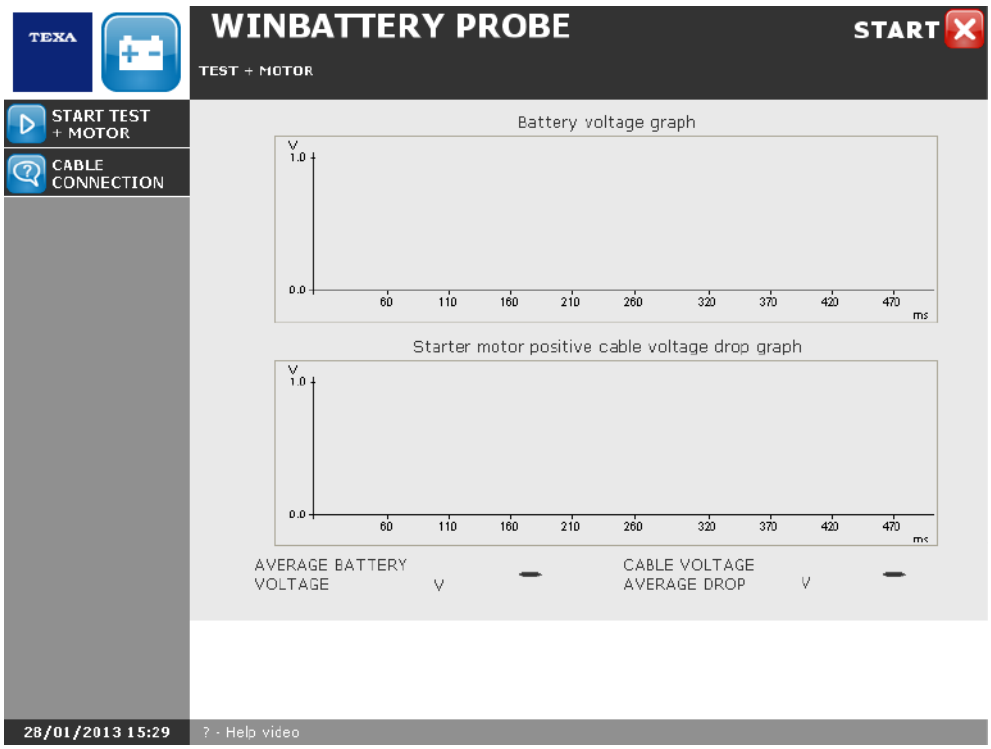
This function allows you to check the voltage value of the battery and of the positive cable of the starter motor.

In order to carry out this test, you need the following material:

- *Device.*
- *BPP Cable.*
- *+MOT Cable.*
- *BICOR amperometric clamp.*

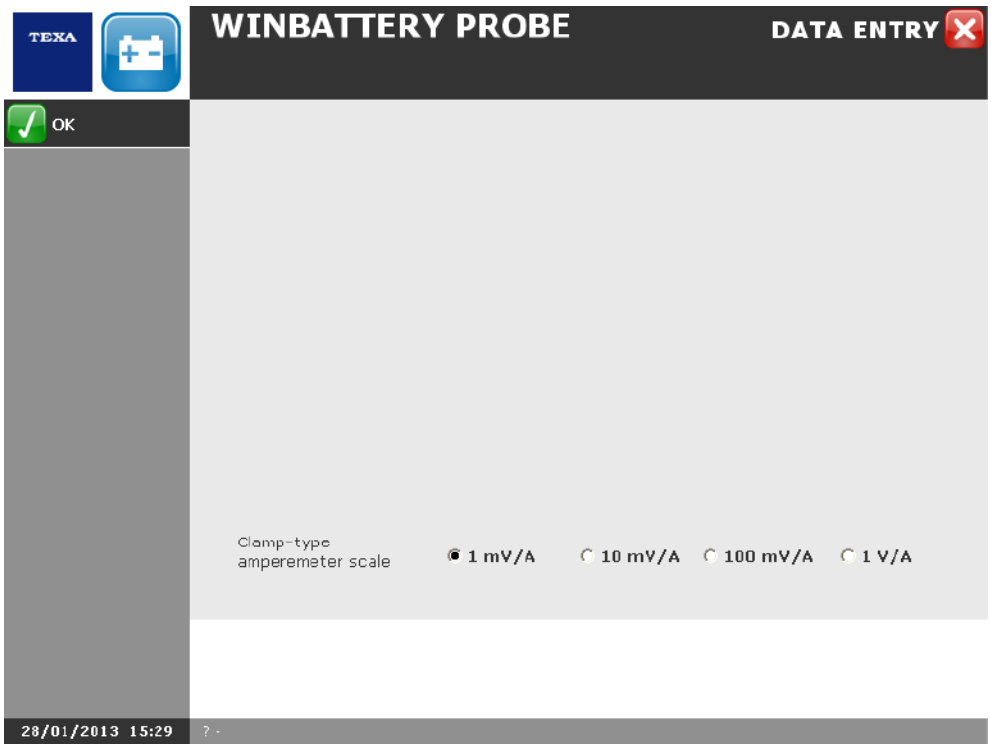
Proceed as follows:

1. Click  .

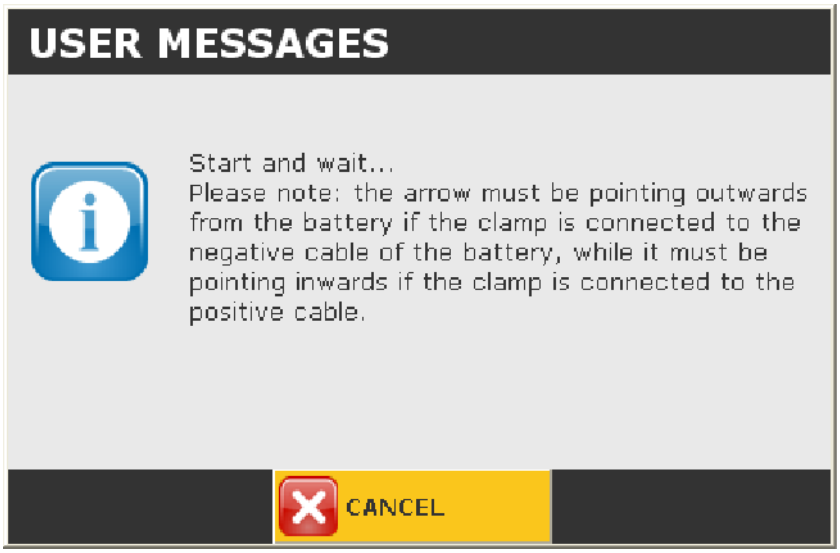


Icons	Name	Description	Notes
	Start Starter Motor + Test	It allows you to launch the test.	--
	Cable Connection	It allows you to launch a video regarding the connections that must be done.	--

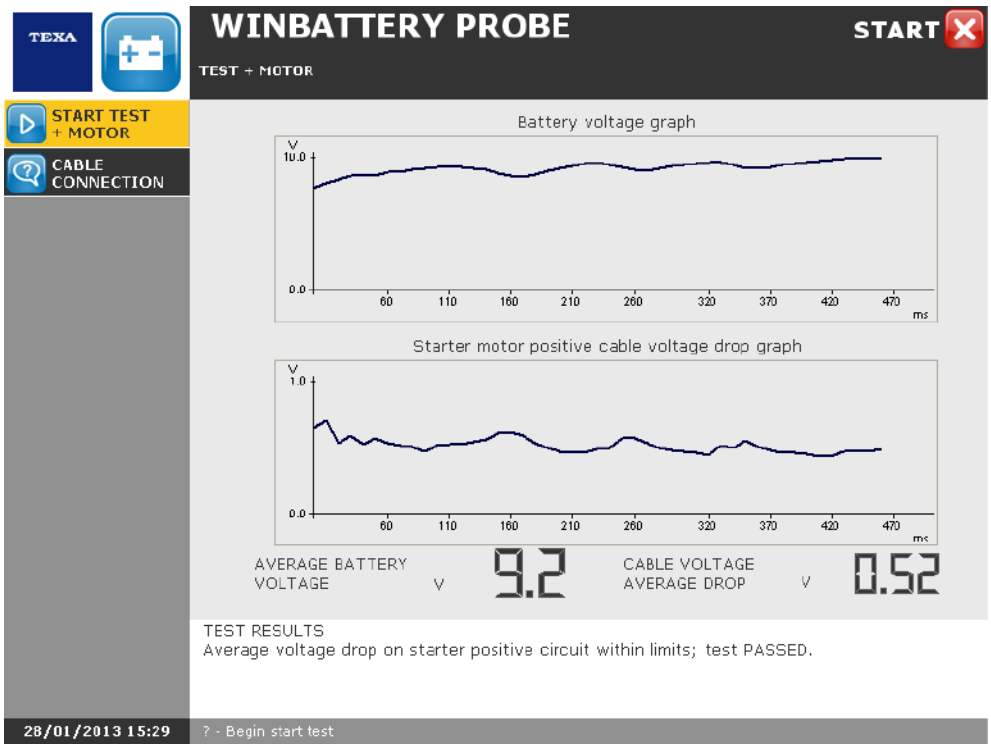
2. Click .
3. Click .
4. Select the ammeter scale.
5. Click .



6. Follow the instructions that appear on the screen.



The test result is displayed.



The screen provides the following information:

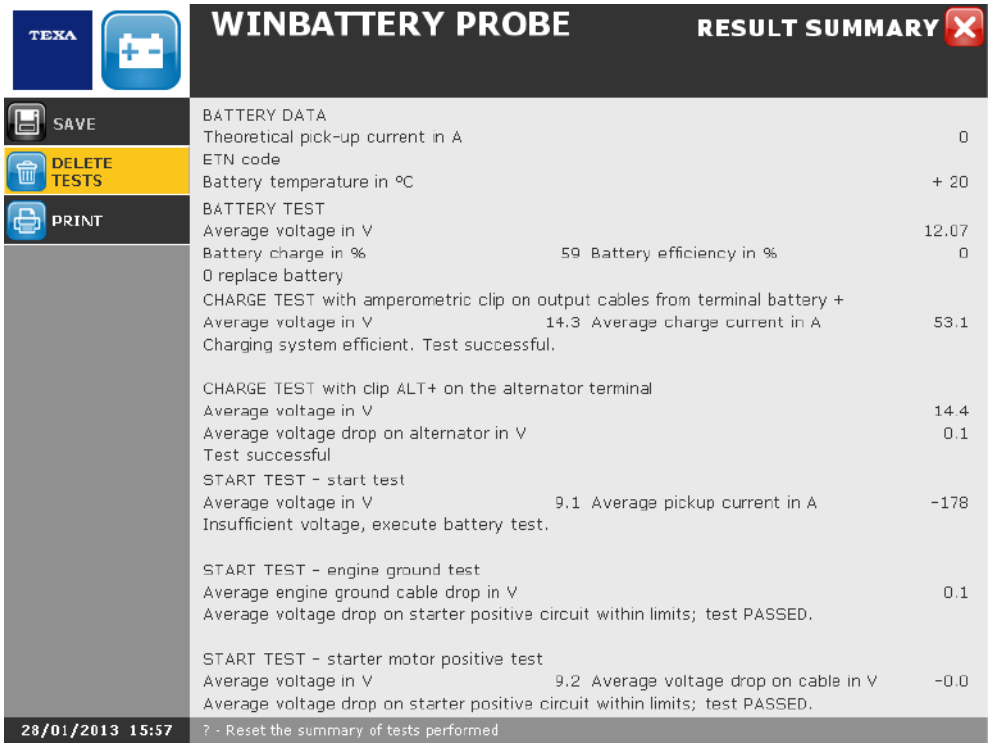
- *Battery voltage graph.*
- *Starter motor positive cable voltage drop graph.*
- *Average battery voltage.*
- *Cable voltage average drop.*
- *Test result.*

3.4 Result Summary

This function allows you to view the results of the performed tests.

Proceed as follows:

1. Click  .

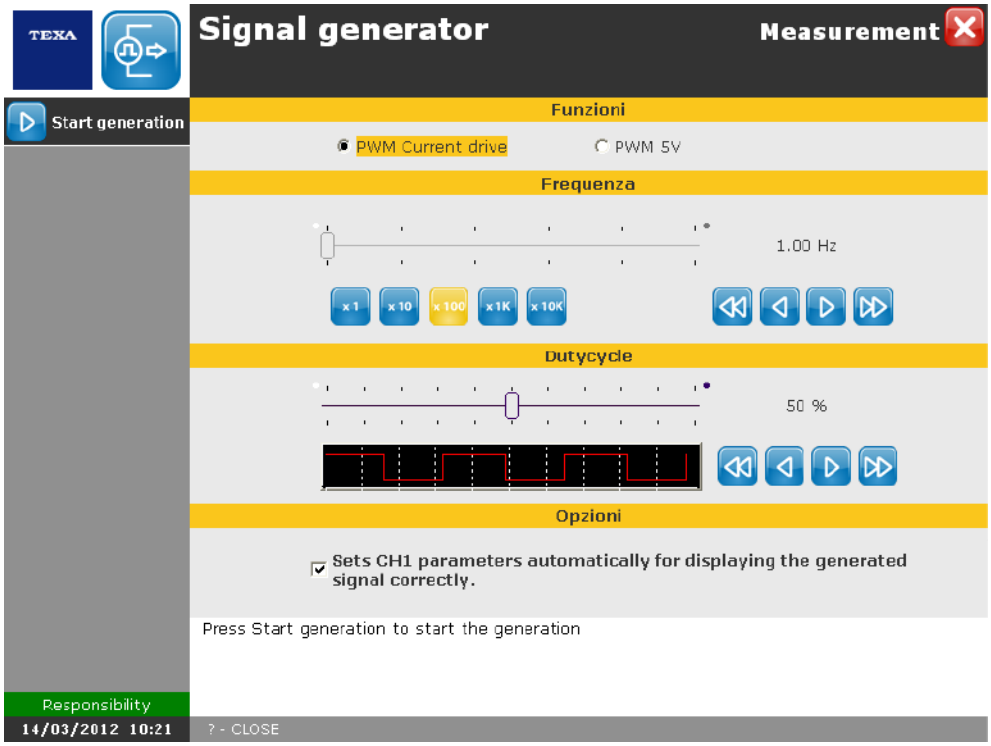


Icons	Name	Description	Notes
	Save	It allows you to save the performed test.	Function available only by accessing from the vehicle selection.
	Delete Tests	It allows you to delete the test results.	--
	Print	It allows you to print a report containing all the results.	--

4 SIGNAL GENERATOR

This function allows to simulate the input and output signals of the ECUs used in cars.

Perform a correct configuration of the device before launching the function.



The screen is divided in the following sections:

- *Functions.*
- *Frequency.*
- *Duty Cycle*
- *Options.*

FUNCTIONS

The section **Functions** allows to choose the use mode of the generator.

The modes that can be selected are:

- *PWM CURRENT DRIVE.*
- *PWM 5V.*

To select a mode tick the box related to the desired mode.

FREQUENCY

The section **Frequency** allows to select the frequency of the generated signal.

To select the frequency you can use the cursor or the following icons:

Icon	Name	Description	Notes
	Frequency cursor range	Allows to select the frequency cursor range.	--
	Back / Forward	Allows to decrease / increase the frequency.	--
	Fast rewind / Fast forward	Allowss to decrease / rapidly increase the frequency.	--

DUTY CYCLE

The section **Duty Cycle** allows to select the duty cycle of the generated signal.

To select the duty cycle you can use the cursor or the following icons:

Icon	Name	Description	Notes
	Back / Forward	Allows to decrease / increase the duty cycle.	--
	Fast rewind / Fast forward	Allows to decrease / rapidly increase the duty cycle.	--

The software displays an image simulating the selected duty cycle.

OPTIONS

The section **Options** allows to prearrange the CH1 of the tool for a correct display of the generated signal.

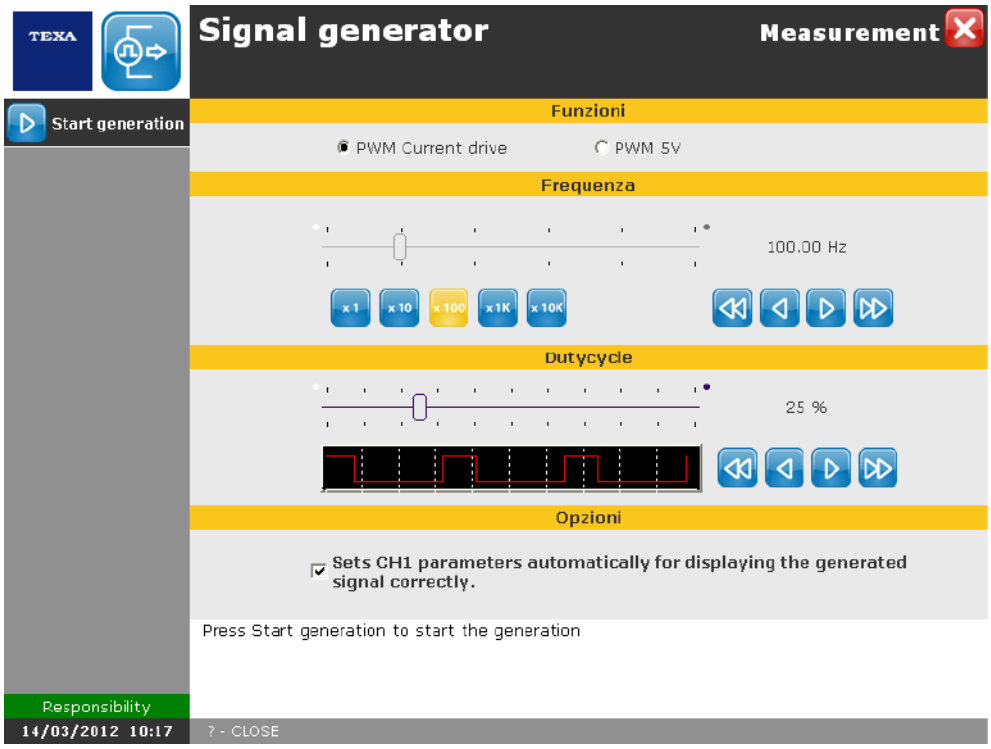
To enable this function tick the corresponding box.

4.1 PWM CURRENT DRIVE

Mode **PWM CURRENT DRIVE** allows to test all the devices that work if activated by circulation of current (for example.: EGR valve, compressor of catalytic converter, etc.).

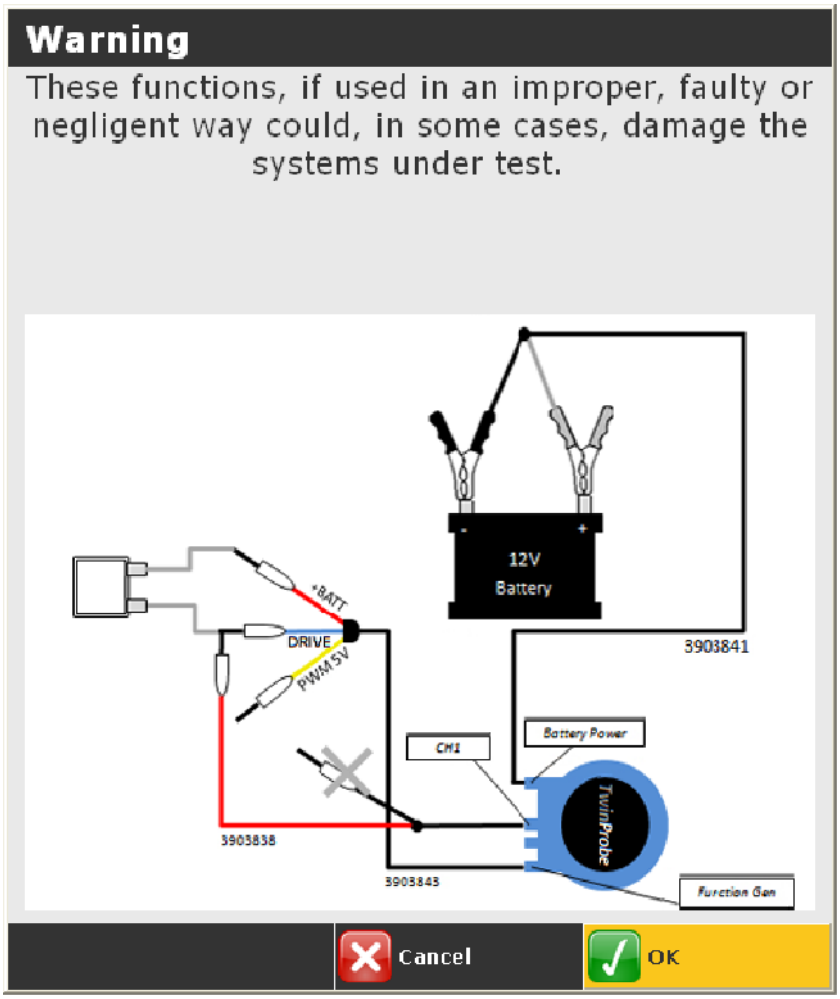
Proceed as follows:

1. Flag the box related to mode **PWM CURRENT DRIVE**.
2. Select **Frequency**.
3. Select **Duty Cycle**.
4. Click on  .



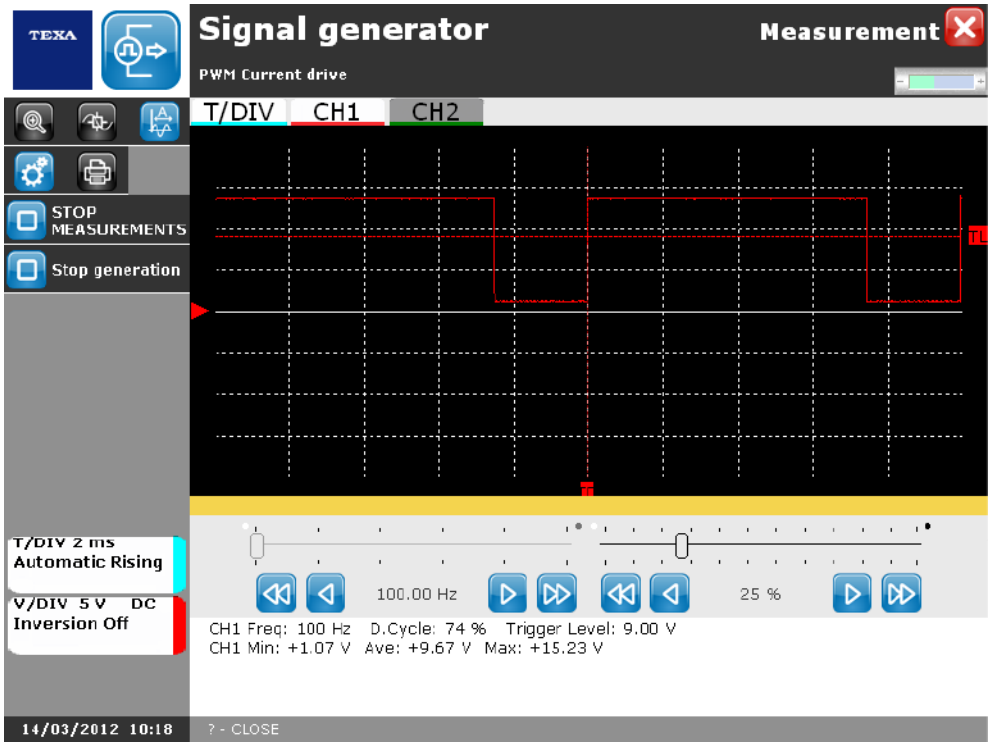
5. Follow the instructions that appear on your screen.

6. Click on .



Oscilloscope function is launched.

Through the icons you may still modify the **Frequency** and the **Duty Cycle** of the generated signal.



Icon	Name	Description	Notes
/	Start / Stop Measure	Allows to start / stop the oscilloscopic measurement.	--
	Stop Generation	Allows to stop the signal generation and go back to the screen of the signal generator parameters.	--

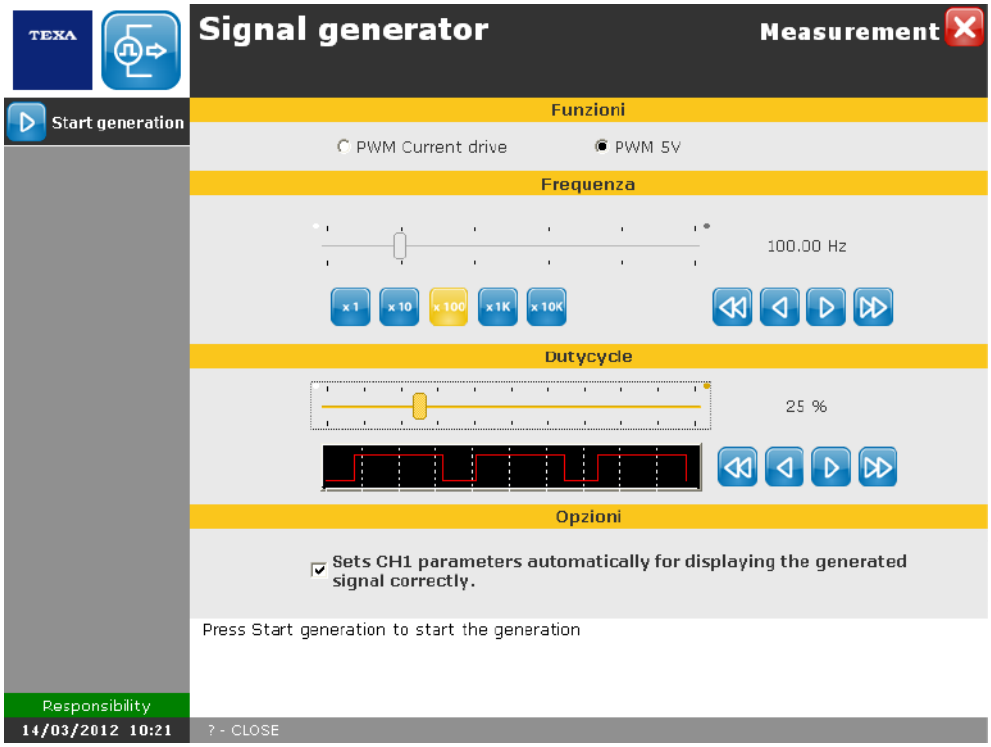
For more information check chapter Oscilloscope and the tool's technical manual.

4.2 PWM 5V

PWM 5 V mode allows to simulate last generation sensors with 0-5 V PWM or PFM type signals.

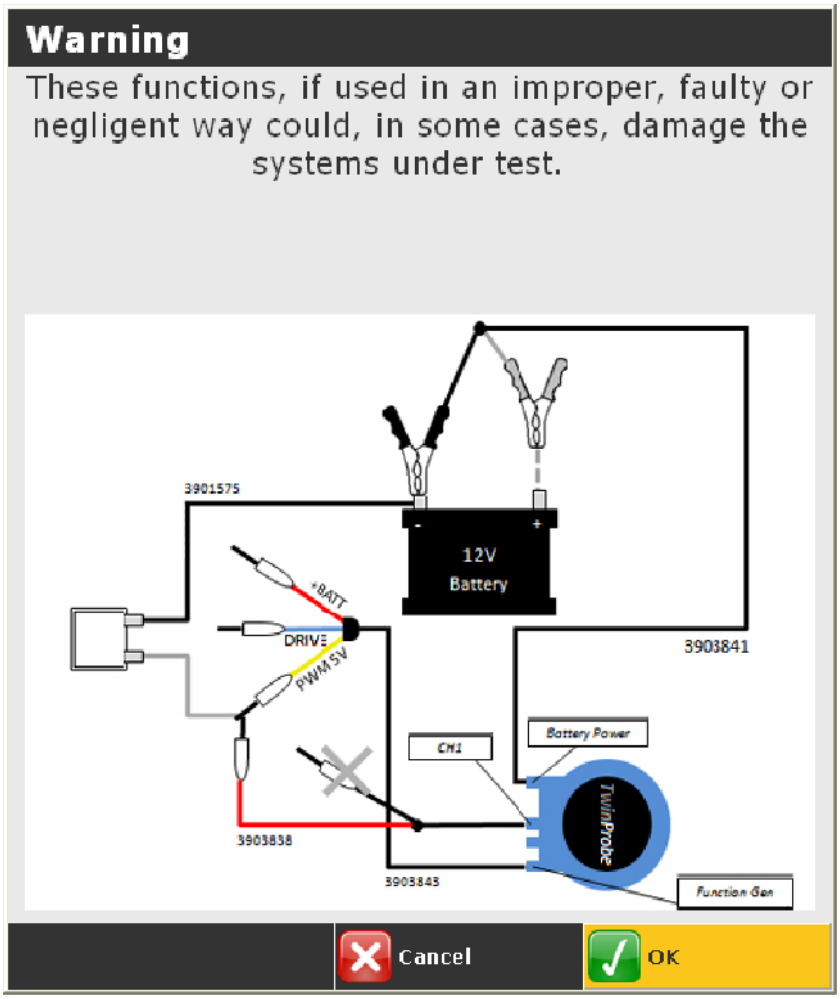
Proceed as follows:

1. Flag the box related to mode **PWM 5V**.
2. Select **Frequency**.
3. Select **Duty Cycle**.
4. Click on  .



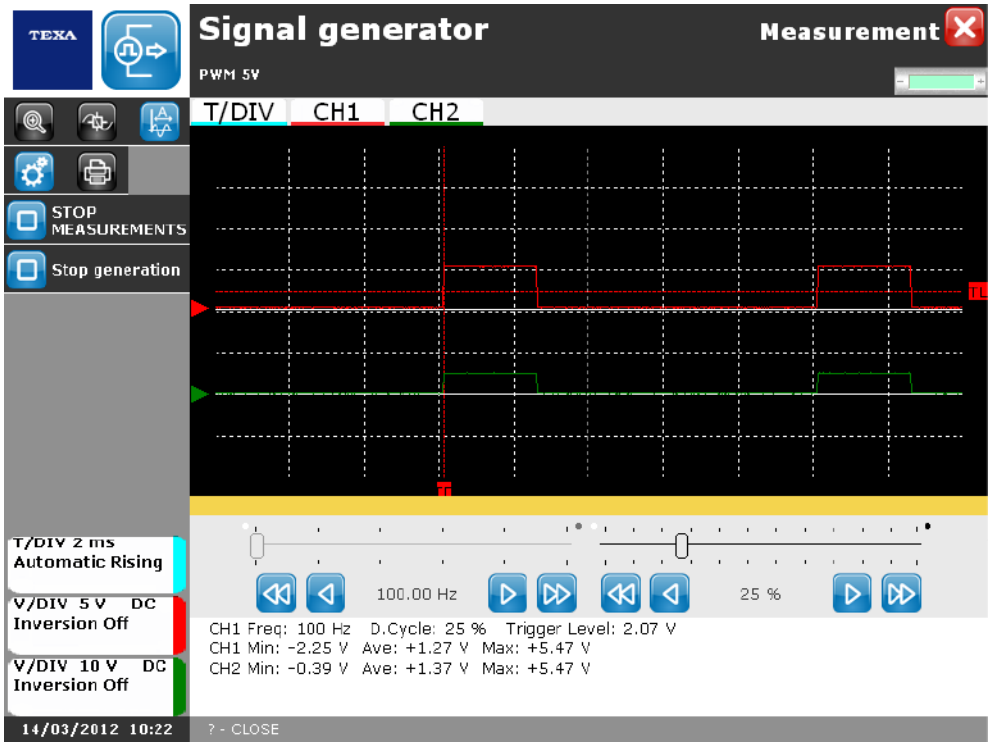
5. Follow the instructions that appear on your screen.

6. Click on  .



Oscilloscope function is launched.

Through the icons it is still possible to modify the **Frequency** and the **Duty Cycle** of the generated signal.



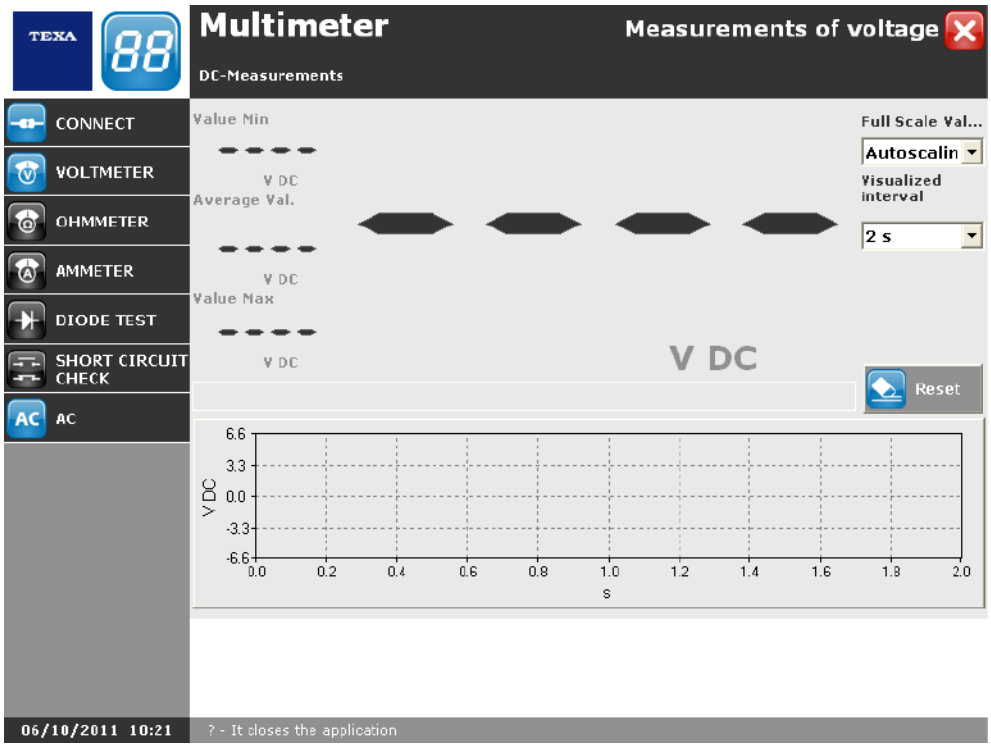
Icon	Name	Description	Notes
/	Start / Stop Measure	Allows to start / stop the oscilloscopic measurement.	--
	Stop generation	Allows to stop the signal generation and go back to the screen of the signal generator parameters.	--

For more information check chapter Oscilloscope and the tool's technical manual.

5 MULTIMETER

This function allows to carry out voltage measurements, current, diode test and short-circuit search.

Perform a correct configuration of the device before launching the function.



Icon	Name	Description	Notes
/	Connect / Disconnect	Allows to connect the software to the tool and start the measurement.	--
	Voltmeter	Allows to carry out voltage measurements.	--
	Ohmmeter	Allows to carry out resistance measurements.	--
	Ampmeter	Allows to carry out current measurements.	--
	Diode test	Allows to verify the diodes bias.	--
	Short Circuit Check	Allows to verify the presence of a short-circuit.	--
AC / DC	AC / DC	Allows to set the current type that is going to be measured (alternate or direct).	--

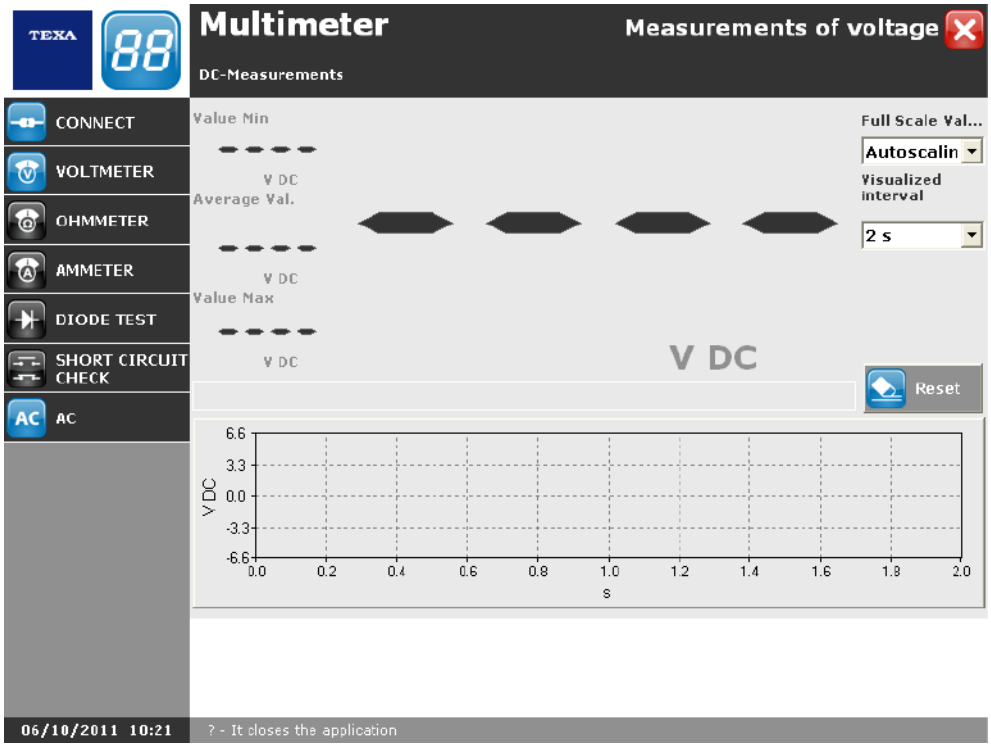
	Reset	Allows you to clear the graph.	--

5.1 *Connect / Disconnect*

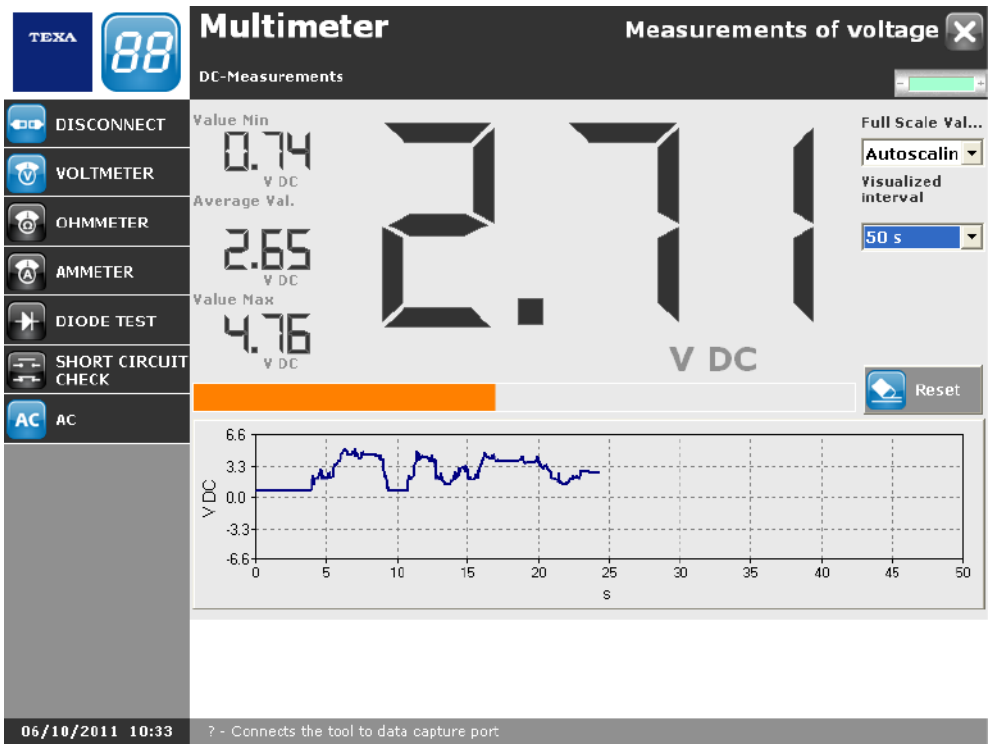
This function allows to connect the software to the tool and start the measurement.

Proceed as follows:

1. Select the desired function (voltmeter, ohmeter, etc.).
2. Click on  .



The measurement starts.



To disconnect the tool click on the icon  .

5.2 Voltmeter

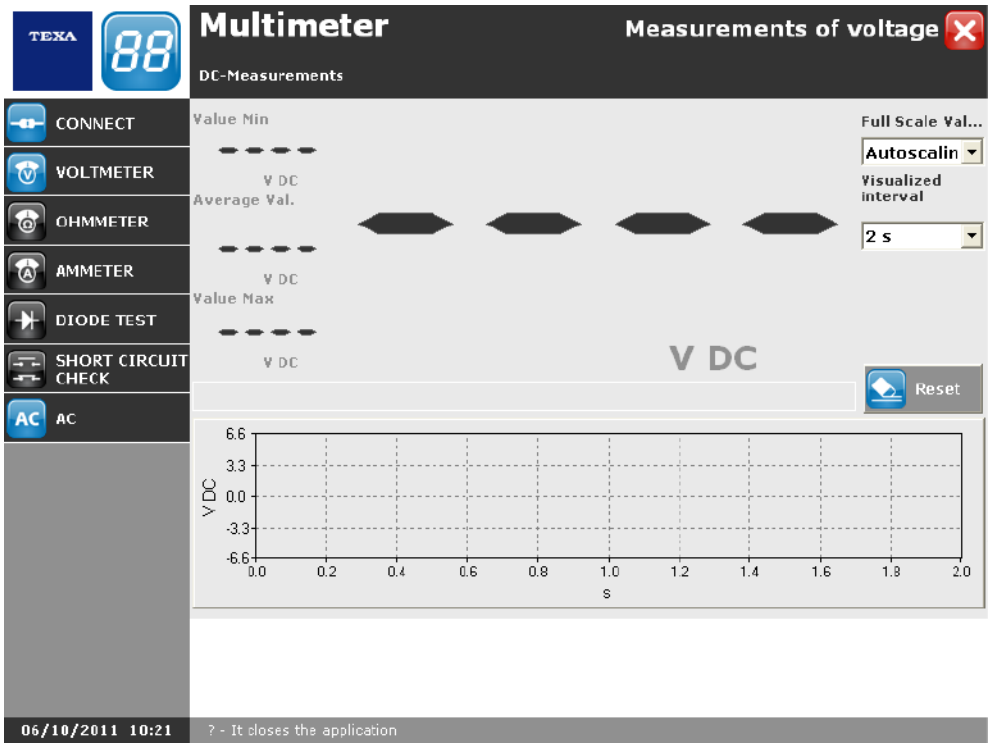
This function allows to carry out voltage measurements.

Proceed as follows:

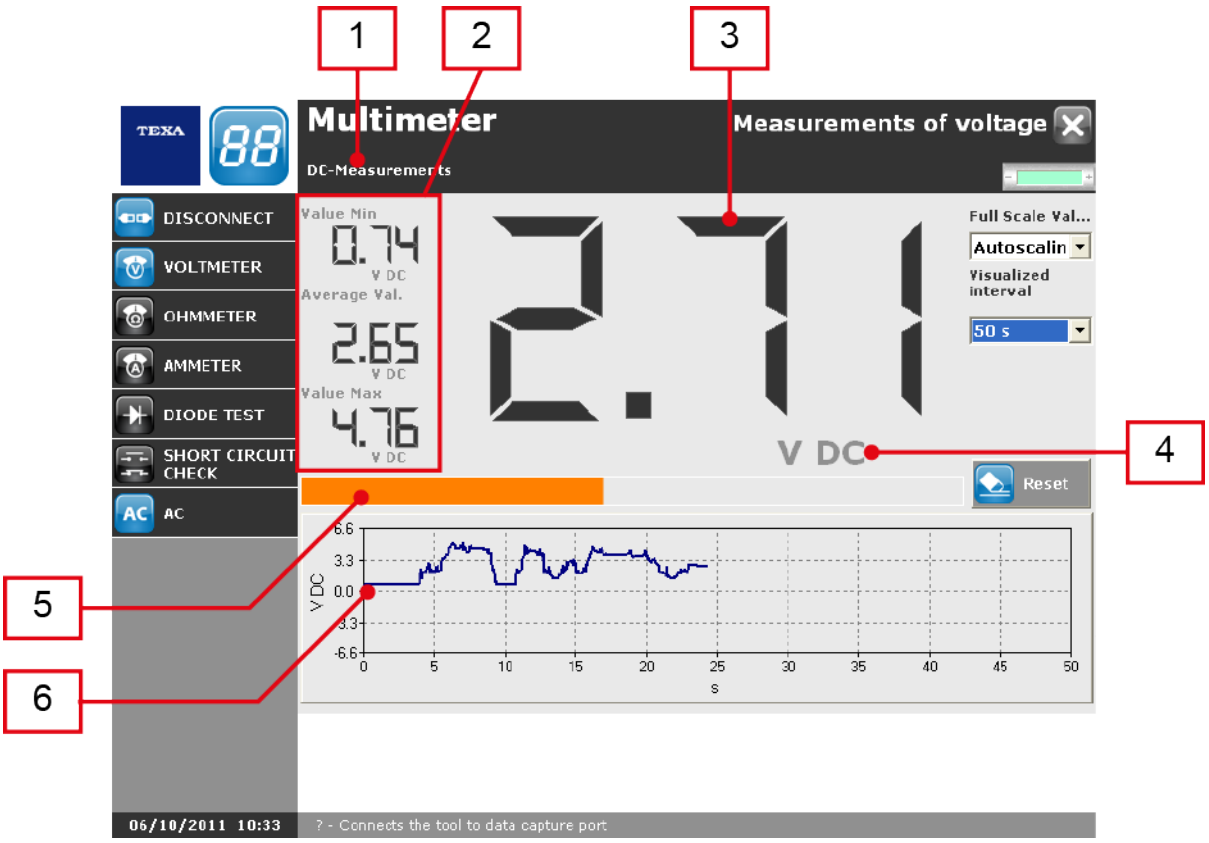
1. Click on  .

The screen of the voltmeter is displayed.

2. Click on  .



The measurement will begin at this point.



This screen provides the following information:

1. *Current type indicator.*
2. *Voltage indicators:*
   - *Minimum voltage detected.*
   - *Average voltage detected.*
   - *Maximum voltage detected.*
3. *Instant voltage detected.*
4. *Measurement unit and current type indicator.*
5. *Scale level indicator. **
6. *Graph of voltage displayed over time.*

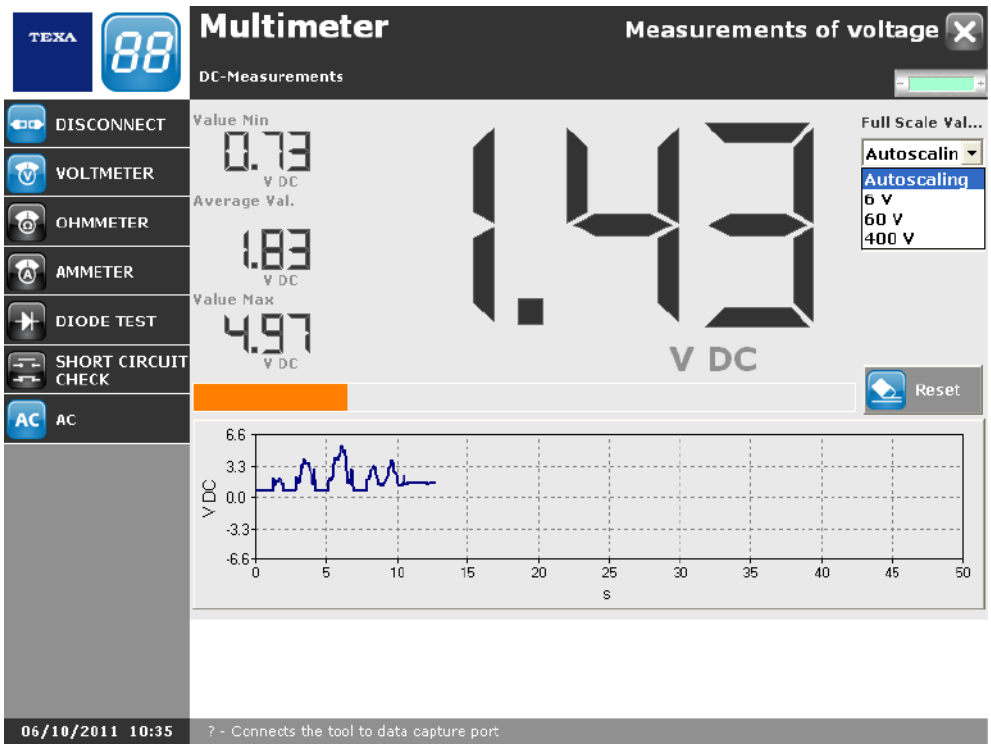
(*) This bar is useful to prevent the measurement from going out of range.

5.2.1 Voltage scale

This function allows to change the voltage scale.

Proceed as follows:

1. Open the corresponding drop-down menu.
2. Select the desired scale.



You can choose between the two voltage scales:

- *±6 V scale.*
- *±60 V scale.*
- *±400 V scale.*
- *Autoscaling.*

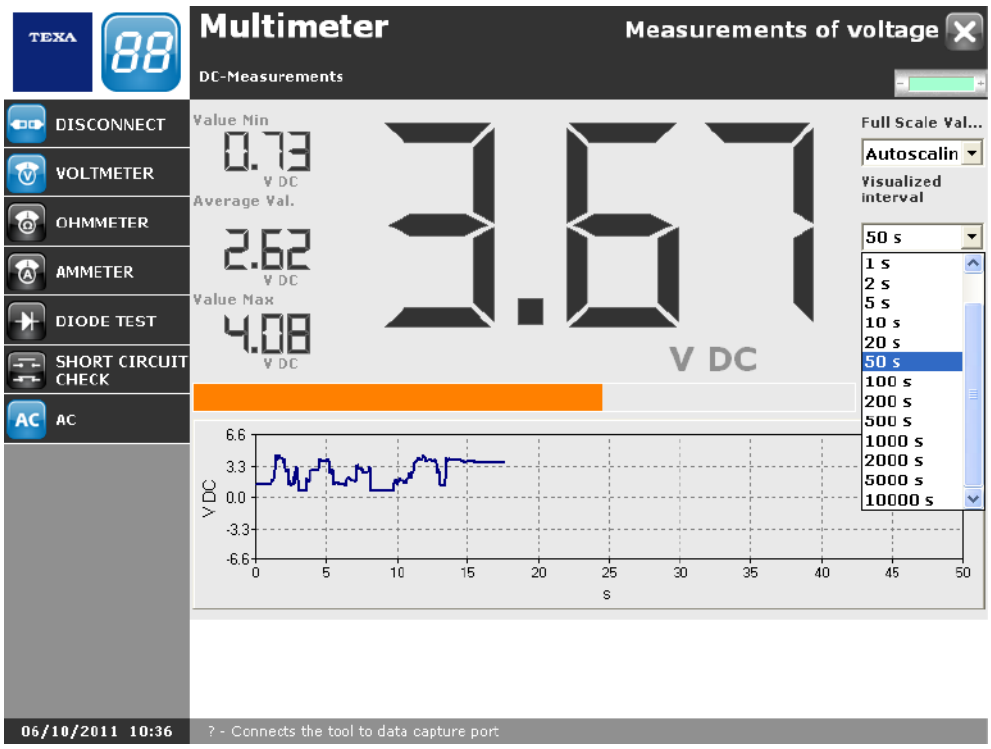
In **Autoscaling** mode the software automatically sets the most proper scale between those available.

5.2.2 Voltage Measurement

This function allows to change the measurement length.

Proceed as follows:

1. Open the corresponding drop-down menu.
2. Select the desired length.



The test lenght may vary from a minmum of 10 s to a maximum of 10000 s.

5.3 Resistance Measurement

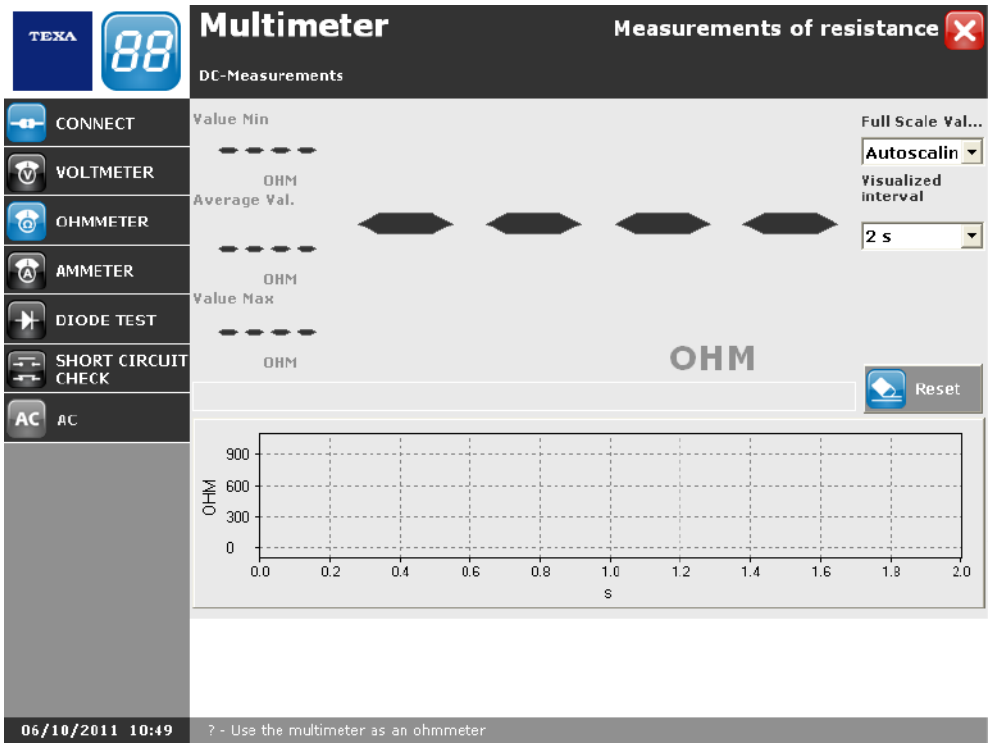
This function allows to carry out resistance measurements.

Proceed as follows:

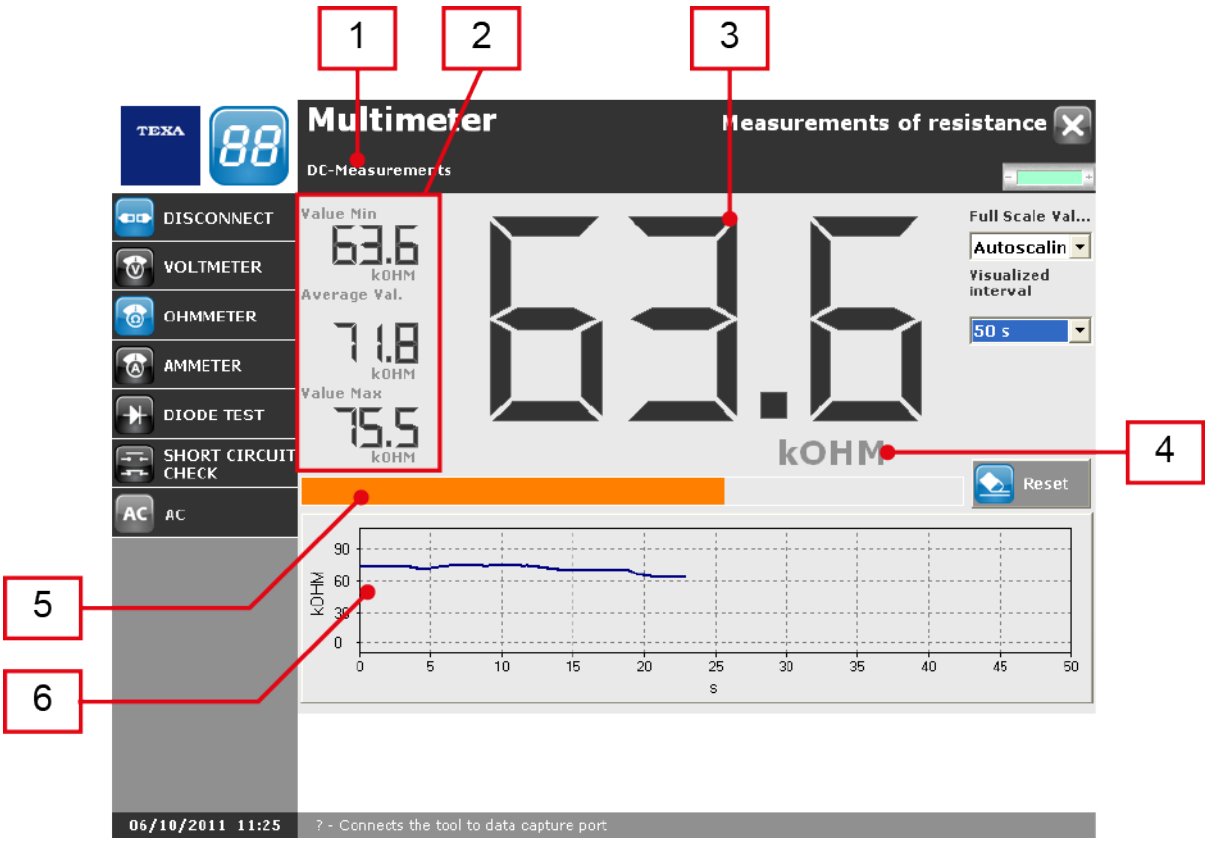
1. Click on  .

The screen of the ohmmeter is displayed.

2. Click on  .



Start measurement.



This screen provides the following information:

1. *Current type indicator.*
2. *Resistance indicators:*
   - *Minimum resistance detected.*
   - *Medium resistance detected.*
   - *Maximum resistance detected.*
3. *Instant resistance detected.*
4. *Measurement unit indicator.*
5. *Scale level indicator. **
6. *Graph of resistance detected over time.*

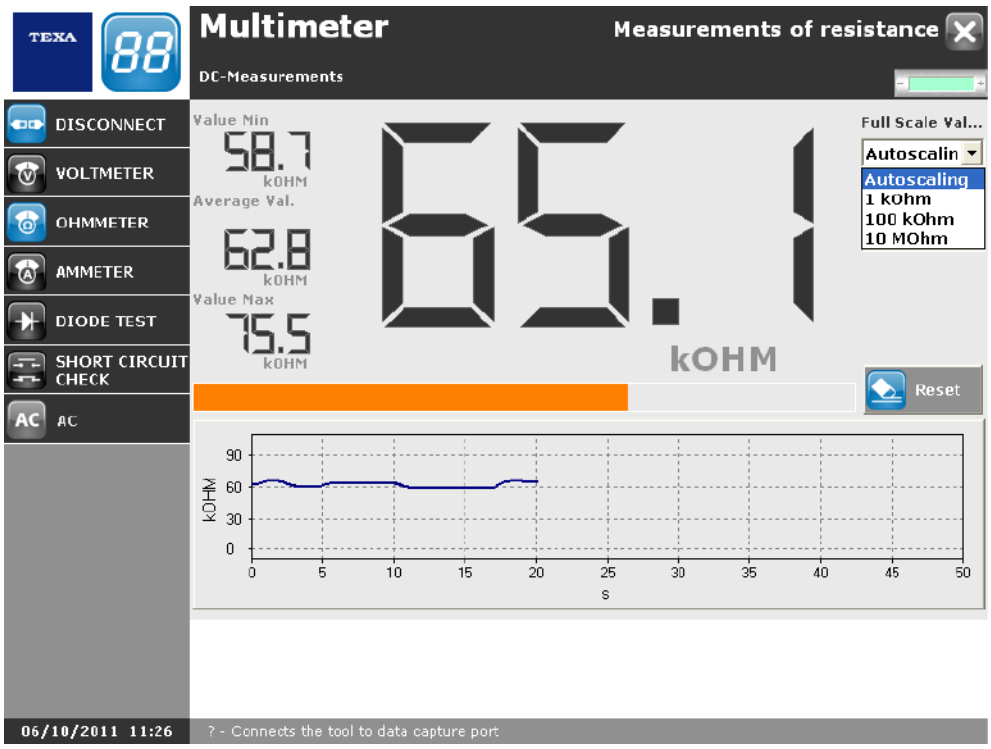
(*) This bar is useful to prevent the measurement from going out of range.

5.3.1 Resistance Scale

This function allows to change the resistance scale.

Proceed as follows:

1. Open the corresponding drop-down menu.
2. Select the desired scale.



You can choose between the two resistance scales:

- *Scale from 0 to 1kΩ.*
- *Scale from 0 to 100kΩ.*
- *Scale from 0 to 10kΩ.*
- *Autoscaling.*

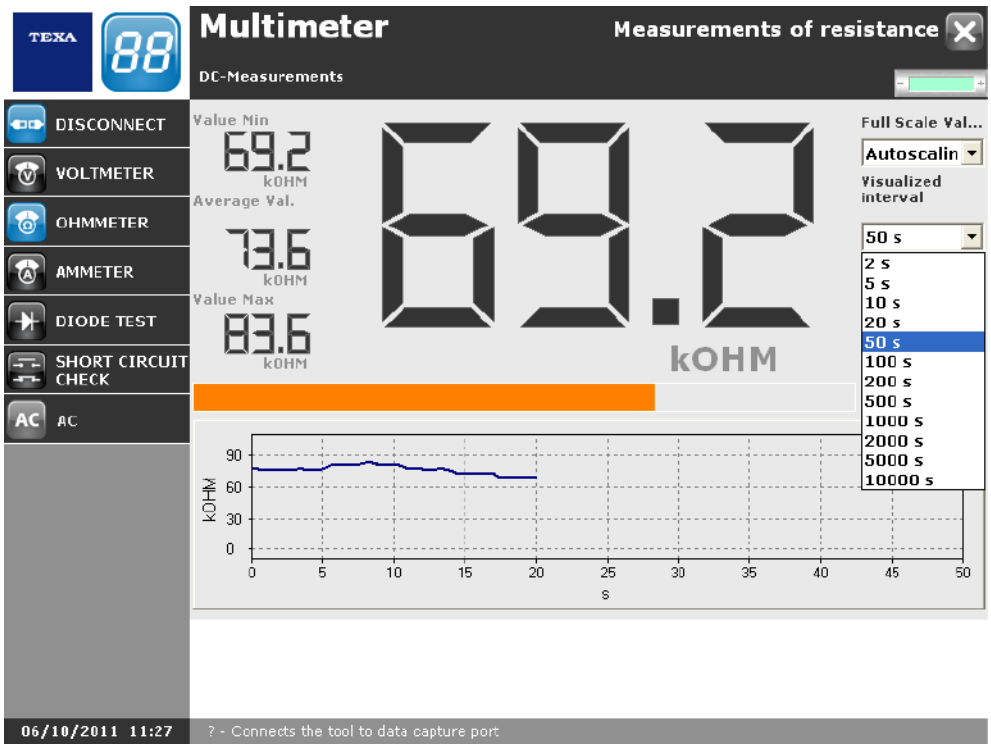
In **Autoscaling** mode the software automatically sets the most proper scale between those available.

5.3.2 Measurement duration

This function allows to change the measurement duration.

Proceed as follows:

1. Open the corresponding drop-down menu.
2. Select the desired length.



The test lenght may vary from a minmum of 10 s to a maximum of 10000 s.

5.4 Ampmeter

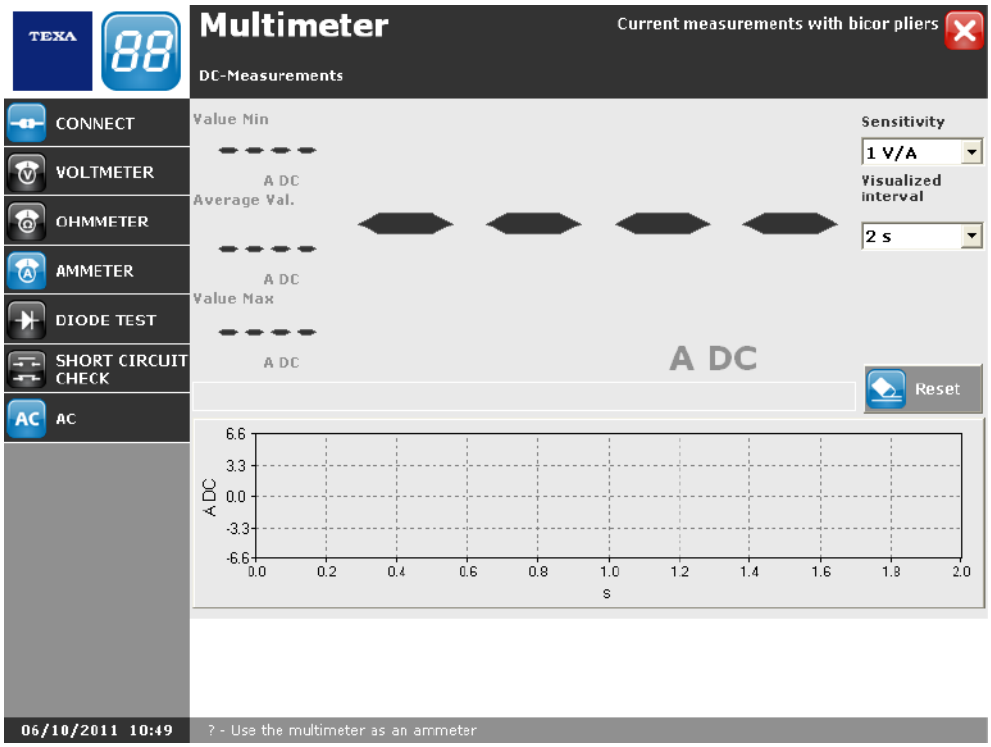
This function allows to carry out current measurements.

Proceed as follows:

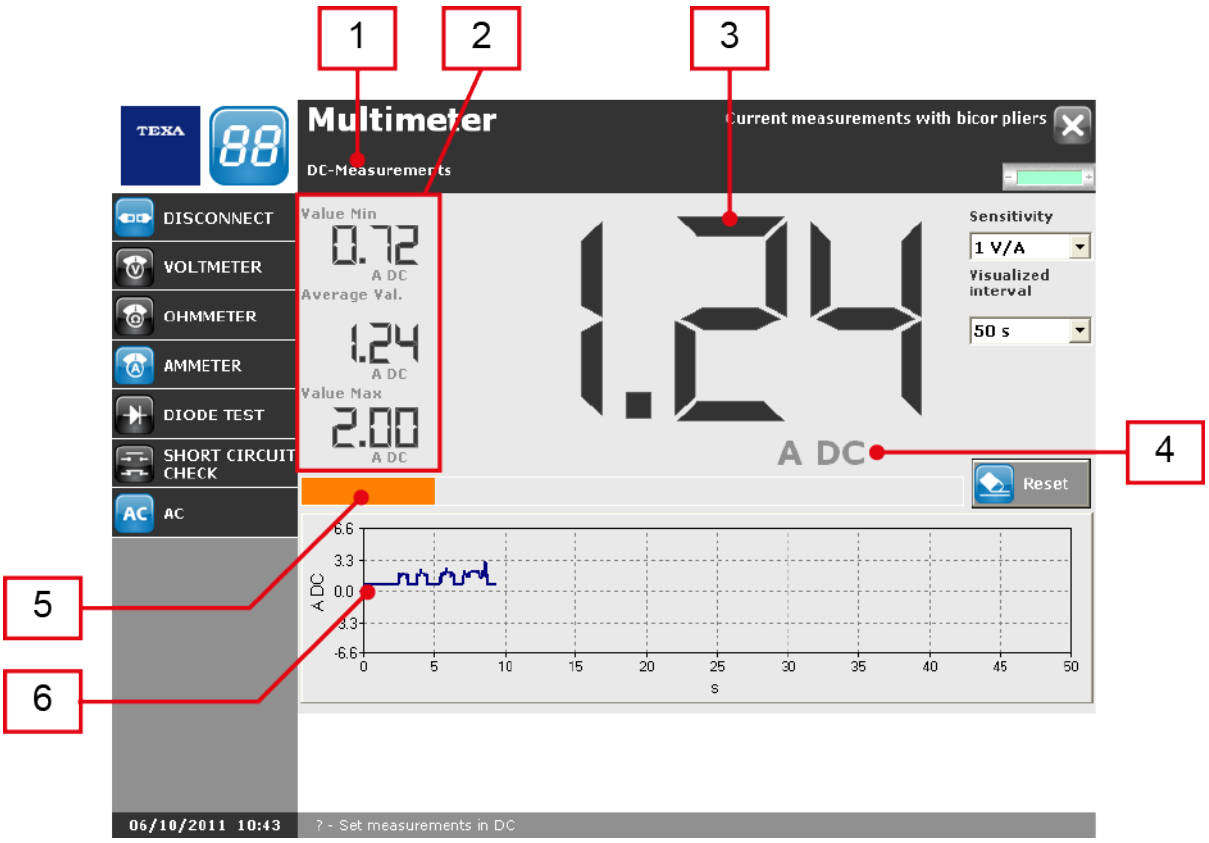
1. Click on  .

The screen of the ampmeter is displayed.

2. Click on  .



Start measurement.



This screen provides the following information:

1. *Current type indicator.*
2. *Detected currents:*
   - *Minimum current detected.*
   - *Medium current detected.*
   - *Maximum current detected.*
3. *Instant current detected.*
4. *Measurement unit and current type indicator.*
5. *Scale level indicator. **
6. *Graph of current detected over time.*

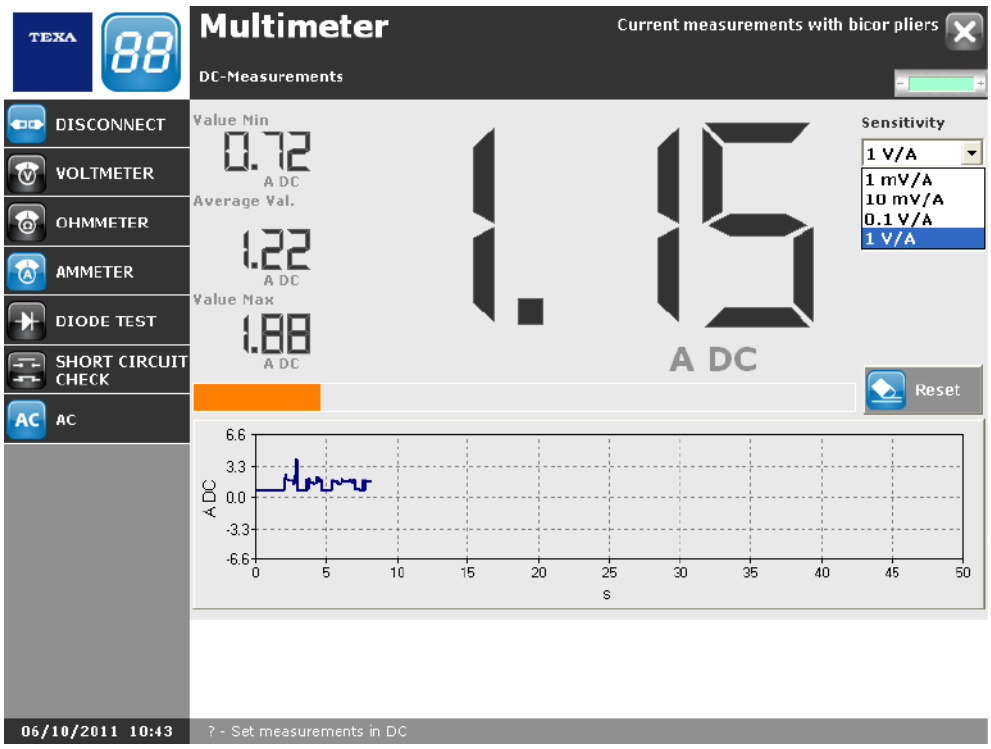
(*) This bar is useful to prevent the measurement from going out of range.

5.4.1 Current Scale

This function allows to change the currents scale.

Proceed as follows:

1. Open the corresponding drop-down menu.
2. Select the desired scale.



You can to choose the ampmeter sensitivity:

1. *Sensitivity at 1 mV/A (measurement range ±120 A).*
2. *Sensitivity at 10 mV/A (measurement range ±440 A).*
3. *Sensitivity at 0,1 V/A (measurement range ±35 A).*
4. *Sensitivity at 0,1 V/A (measurement range ±3.5 A).*
5. *Autoscaling.*

In **Autoscaling** mode the software automatically sets the most proper scale between those available.

Set the same sensitivity both in the software and in the amperometric clamp.

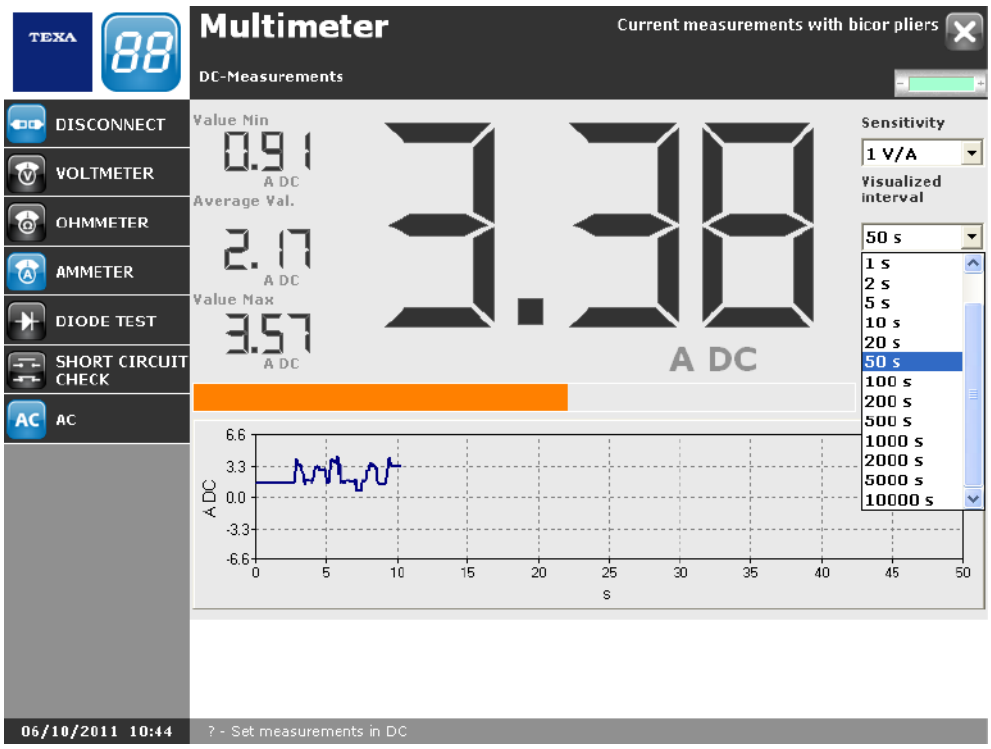
For example: if the sensitivity in the software is set to 1 mV/A, the same sensitivity has to be set also in the amperomtric clamp.

5.4.2 Measurement duration

This function allows to change the measurement duration.

Proceed as follows:

1. Open the corresponding drop-down menu.
2. Select the desired duration.



The test lenght may vary from a minmum of 10 s to a maximum of 10000 s.

5.5 Diode test

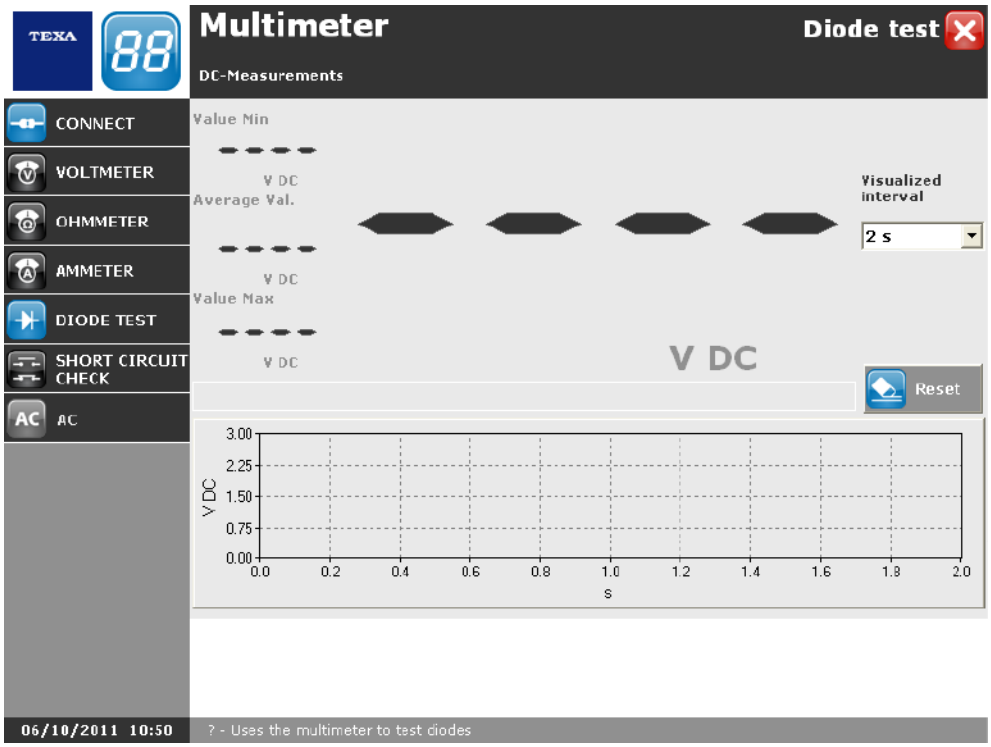
This function allows to verify the diodes bias.

Proceed as follows:

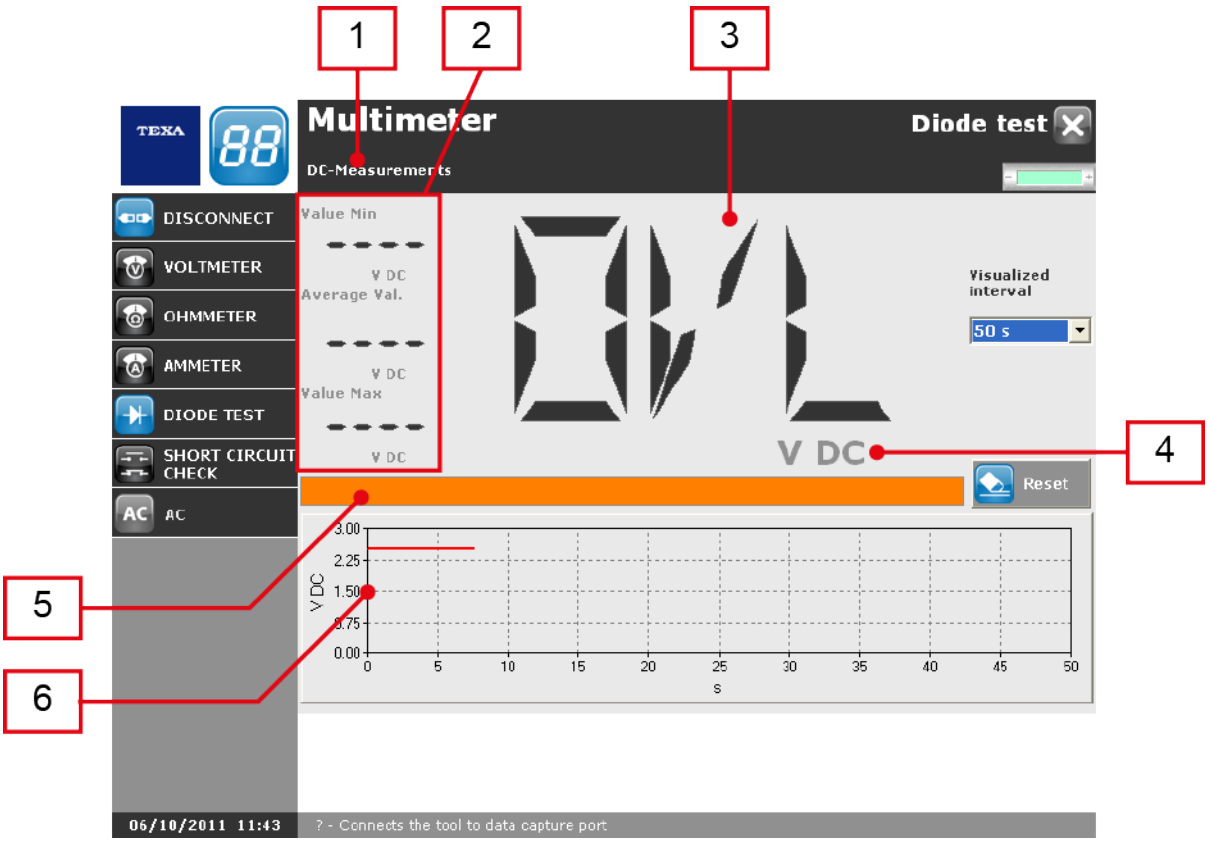
1. Click on  .

The screen of the diode polarization test is displayed.

2. Click on  .



Start measurement.



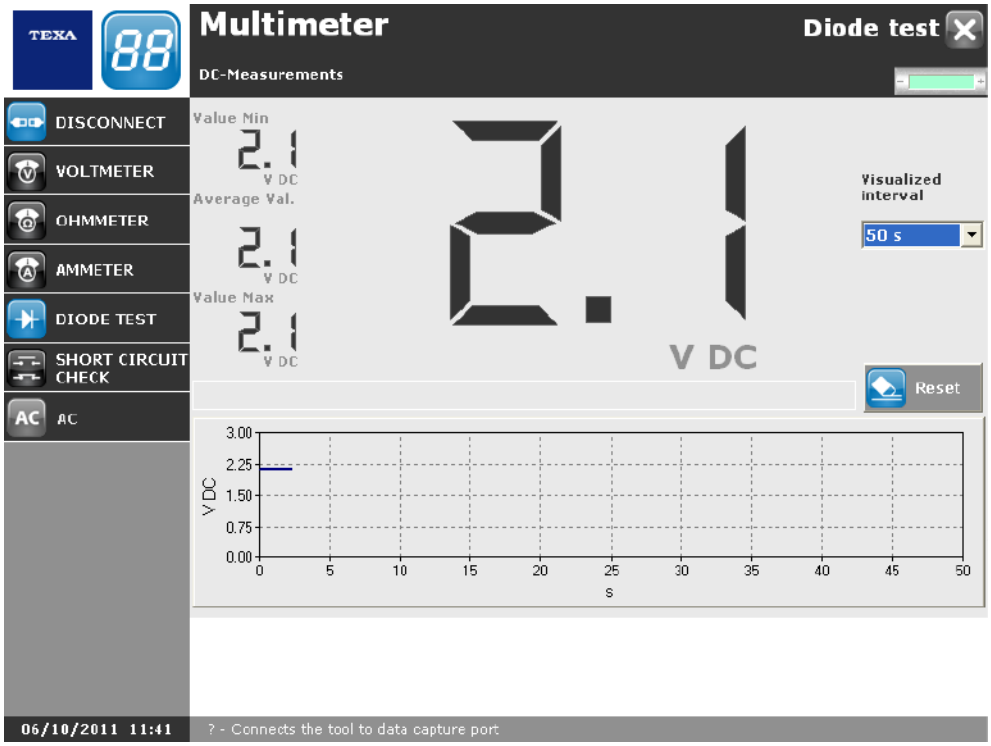
This screen provides the following information:

1. *Current type indicator.*
2. *Voltage indicators:*
   - *Minimum voltage detected.*
   - *Medium voltage detected.*
   - *Maximum voltage detected.*
3. *Diode bias voltage.*
4. *Measurement unit and current type indicator.*
5. *Scale level indicator. **
6. *Graph of voltage detected over time.*

(*) This bar fills in when the diode is inversely biased.

If the diode is directly polarized the software supplies the diode polarization voltage.

If the diode is inversely polarized the software indicates OVL (overload).

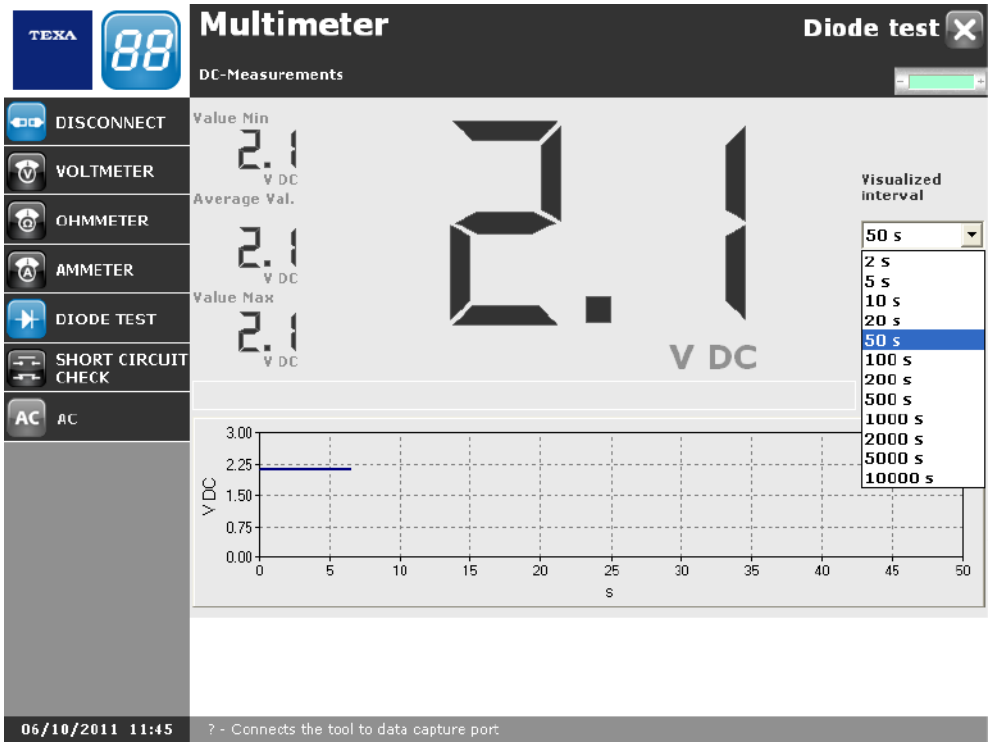


5.5.1 Measurement duration

This function allows to change the measurement duration.

Proceed as follows:

1. Click on  .
2. Select the desired duration.



The test length may vary from a minmum of 10 s to a maximum of 10000 s.

5.6 Short Circuit Search

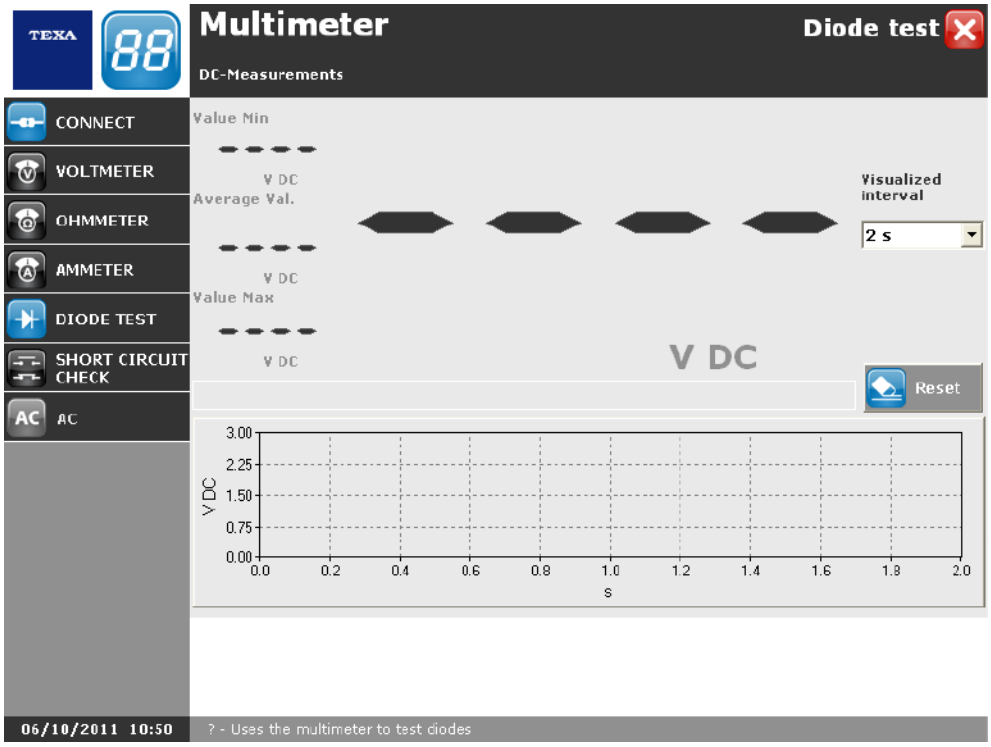
This function allows to verify the presence of any short circuits in the circuit being tested.

Proceed as follows:

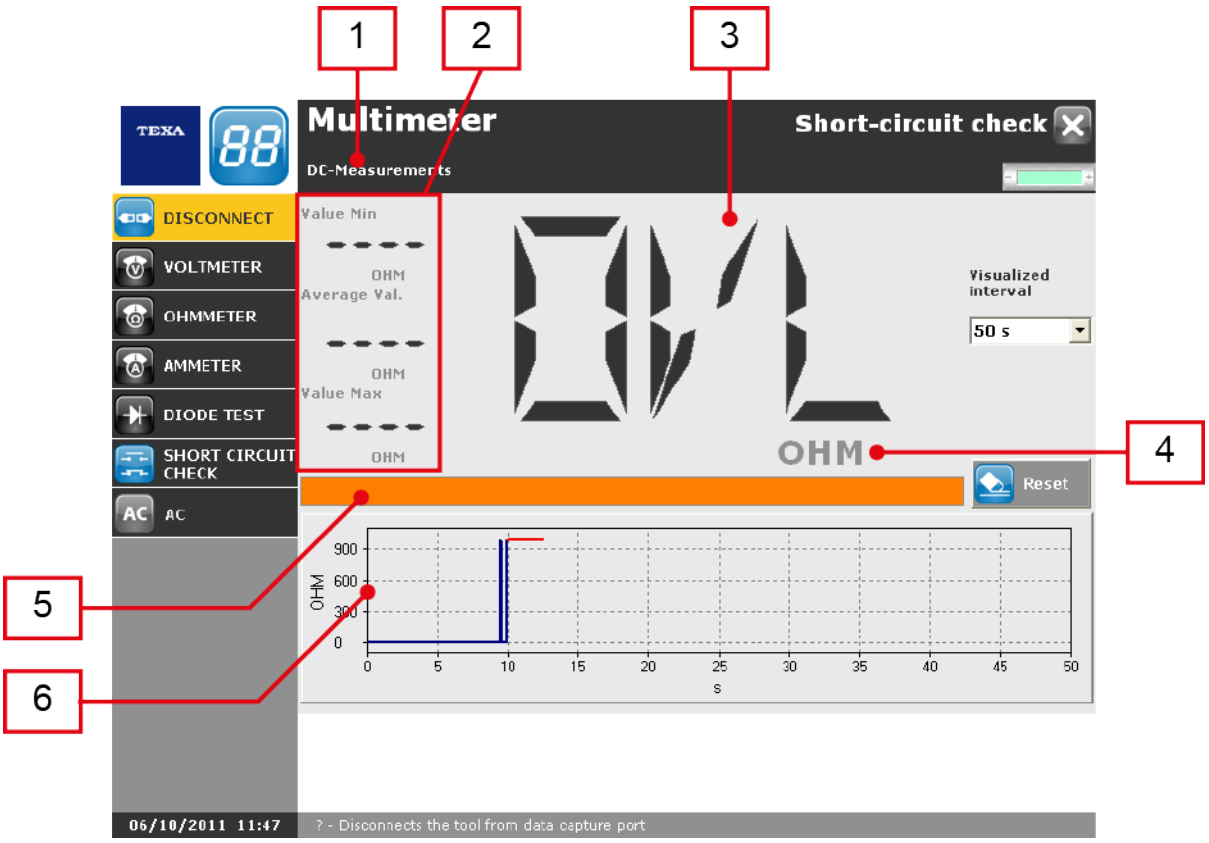
1. Click on  .

The screen of short-circuits search is displayed.

2. Click on  .



Start measurement.



This screen provides the following information:

1. *Current type indicator.*
2. *Resistance indicators:*
   - *Minimum resistance detected.*
   - *Medium resistance detected.*
   - *Maximum resistance detected.*
3. *Instant resistance detected.*
4. *Measurement unit indicator.*
5. *Scale level indicator. **
6. *Graph of voltage detected over time.*

(*) This bar fills in when there is no short-circuit.

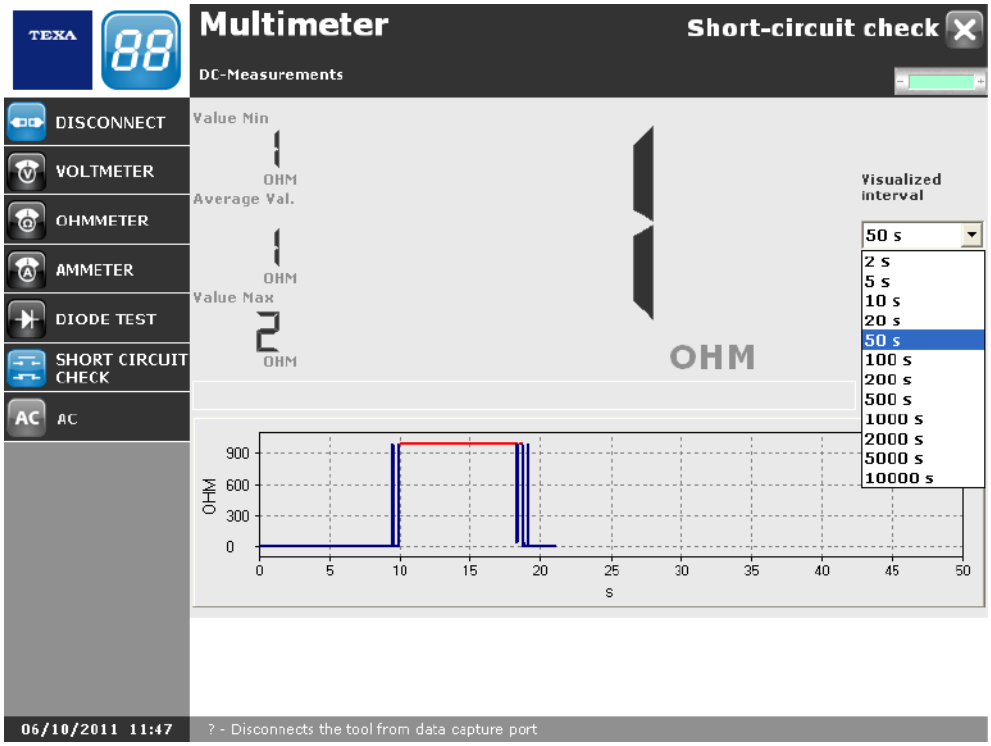
The software indicates the absence of a short-circuit indicating OVL (overload) whereas when short-circuit is present it indicates the resistance value.

5.6.1 Measurement duration

This function allows to change the measurement duration.

Proceed as follows:

1. Click on  .
2. Select the desired duration.



The test lenght may vary from a minimum of 10 s to a maximum of 10000 s.

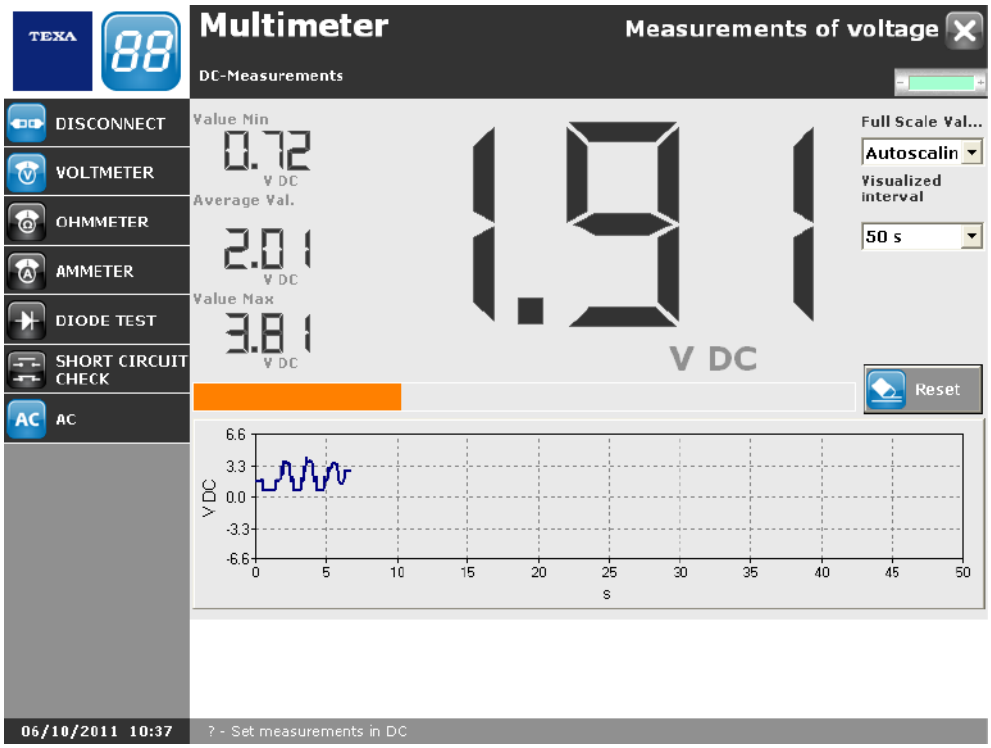
5.7 Type of Current

This function allows to set the current type that is going to be measured (alternate or direct).

It is only possible to change the current type from Voltmeter and Ampmeter functions.

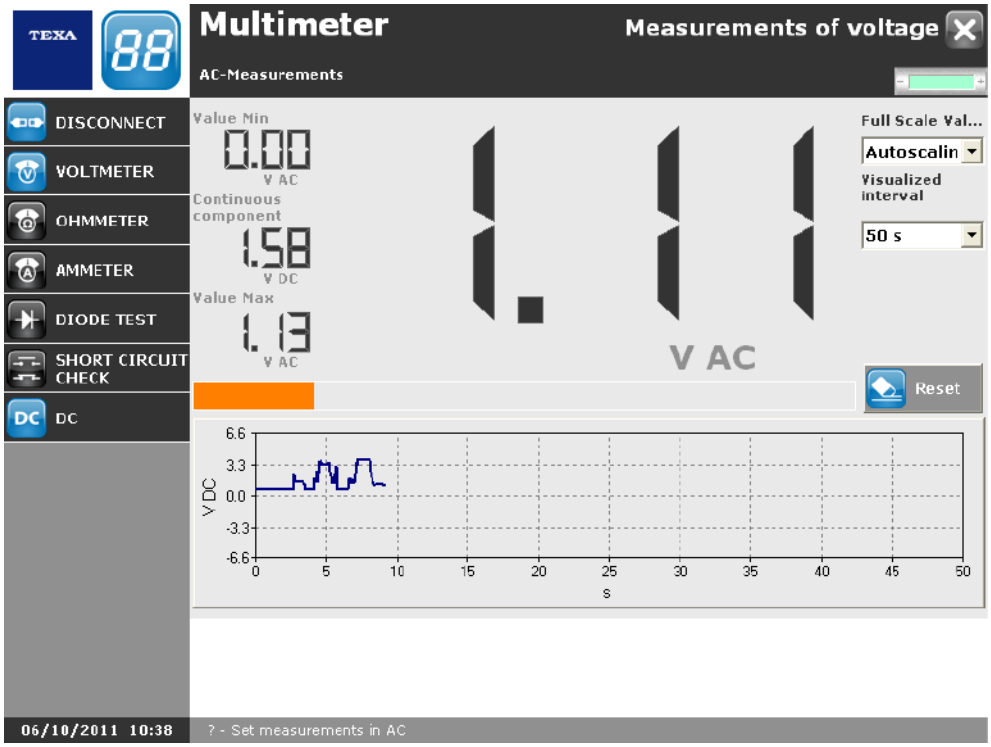
Proceed as follows:

1. Click on AC.



The device has been set to measure an alternate current.

2. Click on DC.



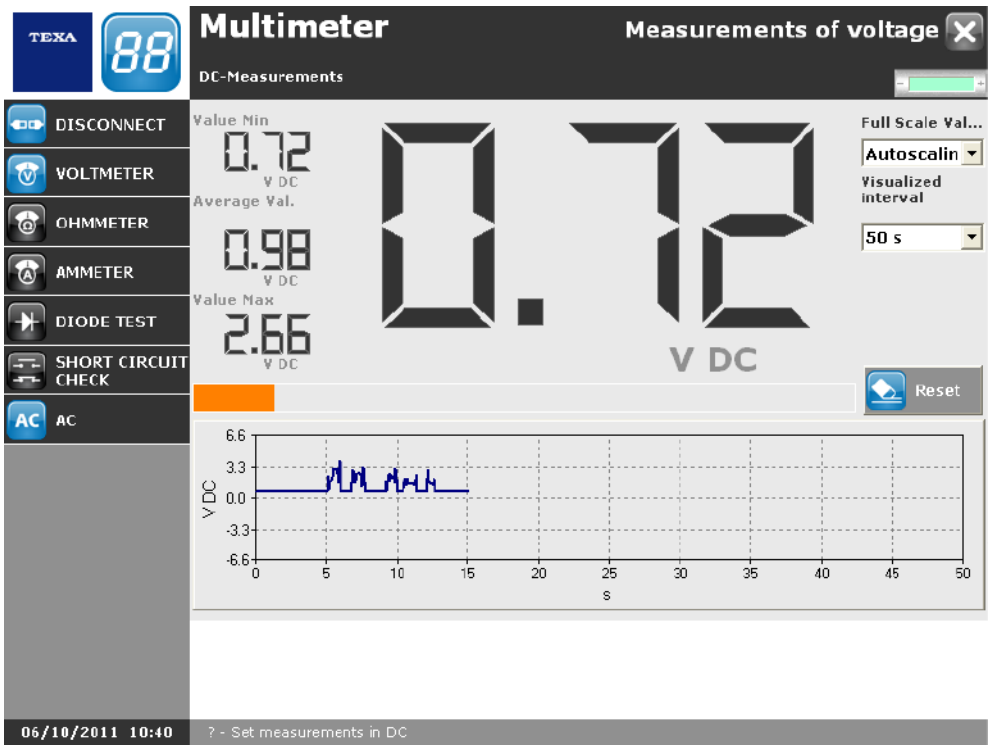
The device starts measuring a direct current again.

5.8 Reset

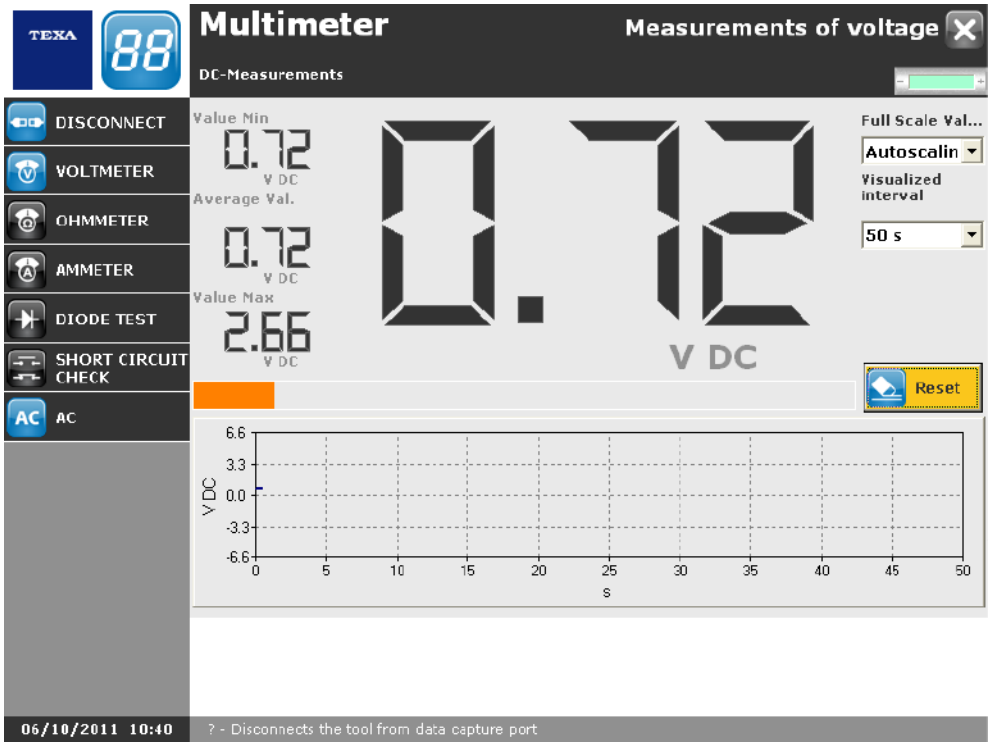
This function allows you to clear the graph.

Proceed as follows:

1. Click on  .



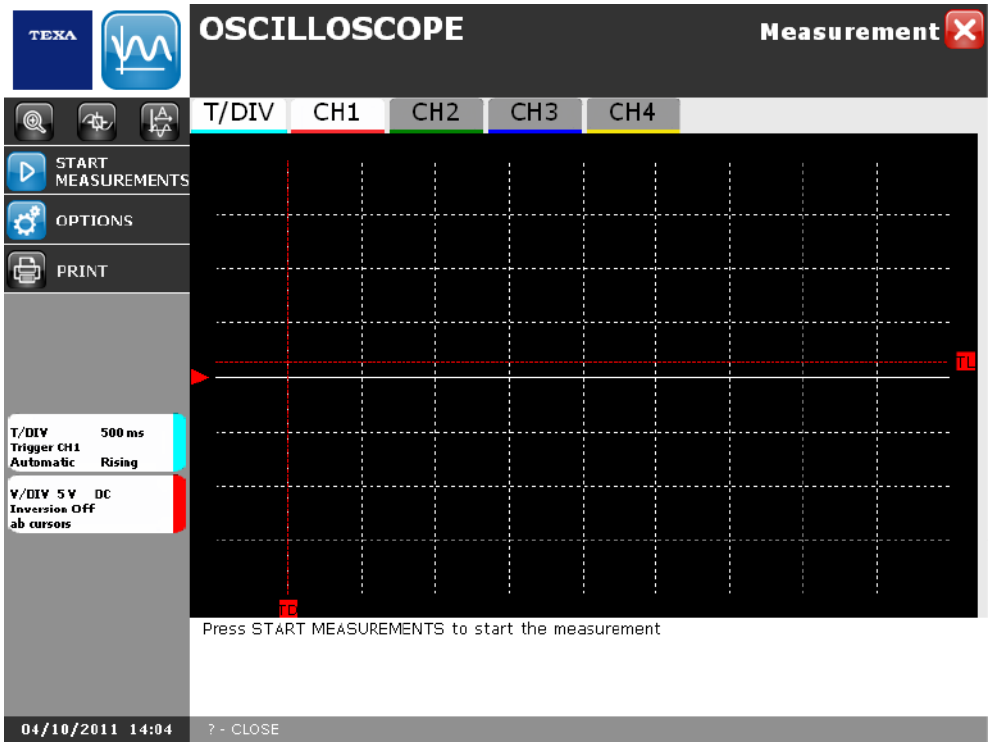
The graph is set to zero.



6 OSCILLOSCOPE

This function allows to display graphically the pattern of an electric signal over time.

Perform a correct configuration of the device before launching the function.



Icon	Name	Description	Notes
/	Start / Stop	Allows to start or stop the measurement.	--
	Autoscaling	Allows to start autoscaling.	--
	ZOOM	Allows to zoom in an area on the graph.	--
	Cursors	Allows to know the signal value in the desired moment.	--
	Options	Allows to access the oscilloscope options.	--
	Print	Allows you to print a report of the test that has been performed.	--

6.1 Starts measurement

This function allows starting the measurement.

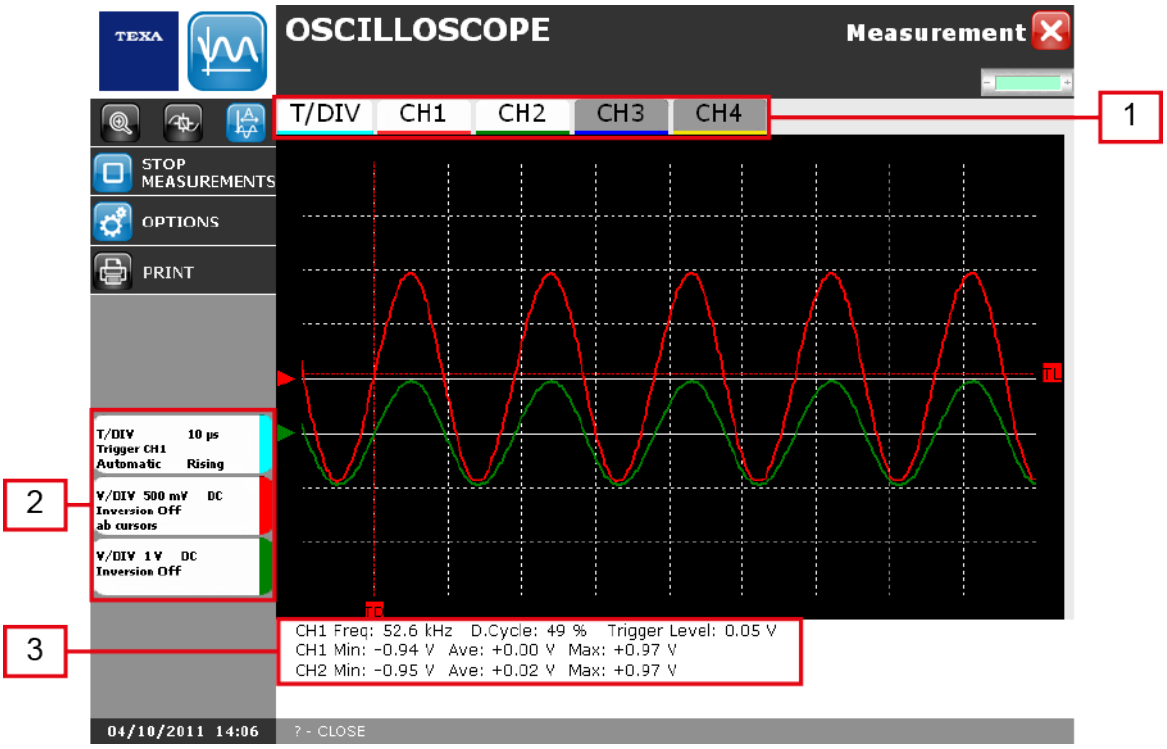
The software looks like an oscilloscope with 8 vertical divisions and 10 horizontal divisions.

You can measure a maximum of 4 signals corresponding to the 4 channels managed by the software.

Proceed as follows:

1. Click on  .

The measurement will begin at this point.



This screen provides the following information:

Number	Name	Description
1	Upper Bar	The upper bar is composed of the labels relating to channels (CH1...CH4)* and from the label relating to Time Division (T/DIV). The grey labels indicate that the corresponding channels are not active.
2	Side bar	The side bar is composed of the labels relating to active channels and from the label relating to Time Division. The label related with a channel indicates its measurement scale (ex: 1 V DC).

3	Lower Bar	The lower bar provides the following informations related to the trigger channel: • **Min:** *indicates the minumum detected value.* • **Med:** *indicates the medium detected value.* • **Max:** *indicates the maximum detected value.* • **Freq:** *Indicates the signal frequency.* • **D. Cycle:** *indicates the Duty Cycle value in percentage.*

(*) The channel number may vary according to the device used.

The Duty Cycle has an actual value only by measuring a square wave.

Click on the icon to stop the measurement.

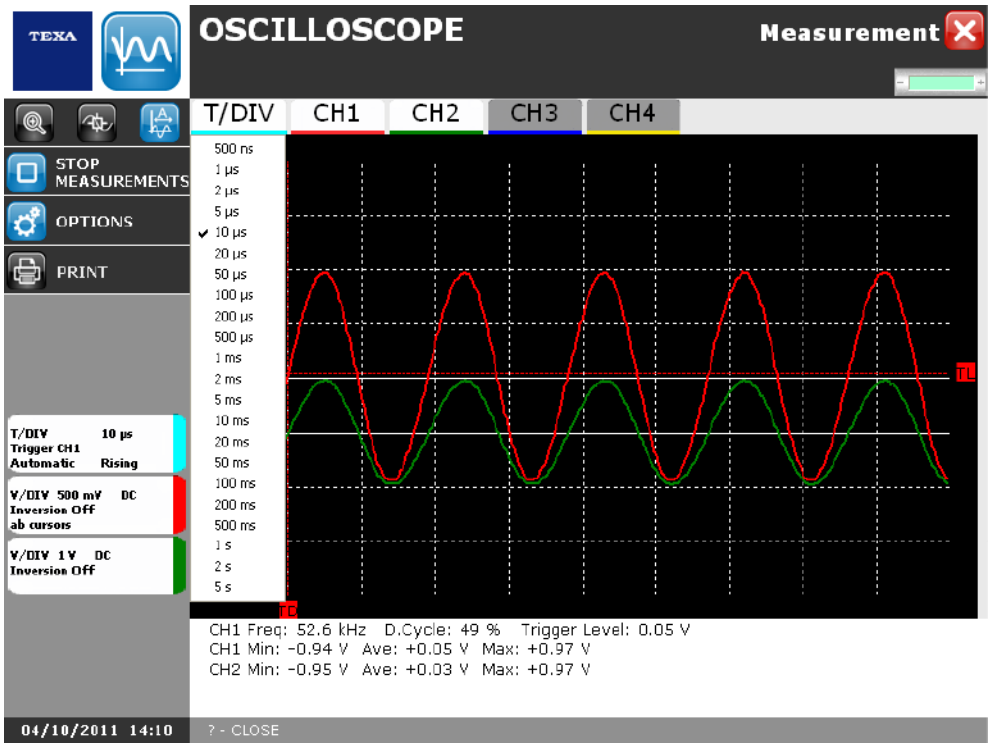
6.1.1 T/DIV

This function allows to set the most appropriate Time Division for the measurement you wish to carry out.

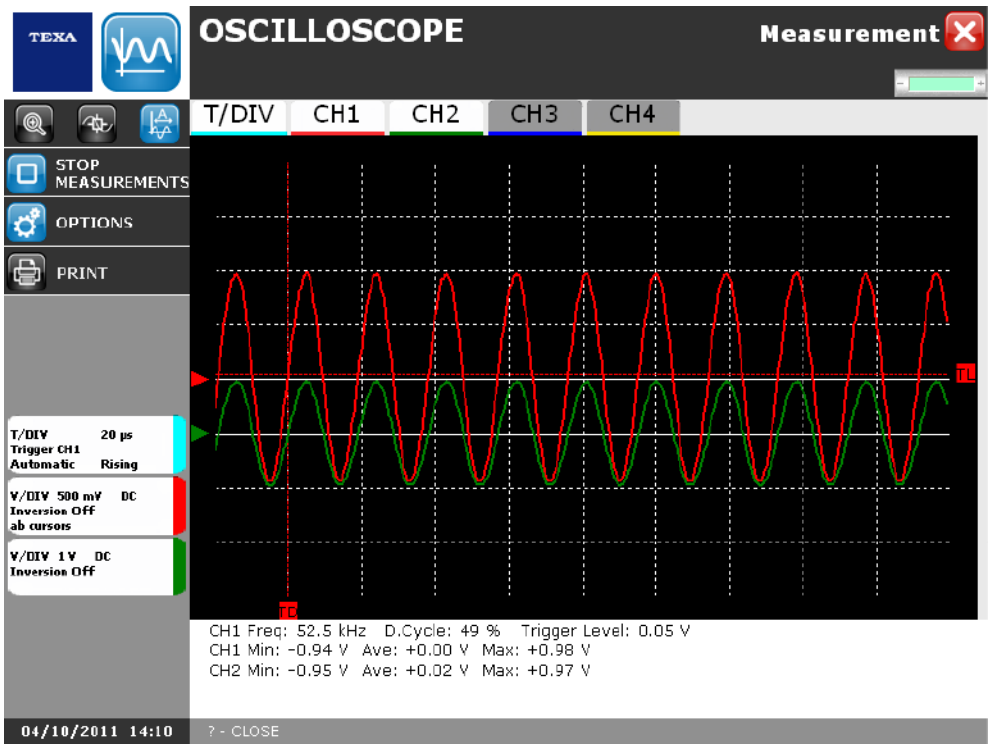
The Time Division is the time base of the oscilloscope, that is how many seconds a division lasts.

Proceed as follows:

1. Click on T/DIV icon.
2. Select the desired Time Division.



The Time Division is set.

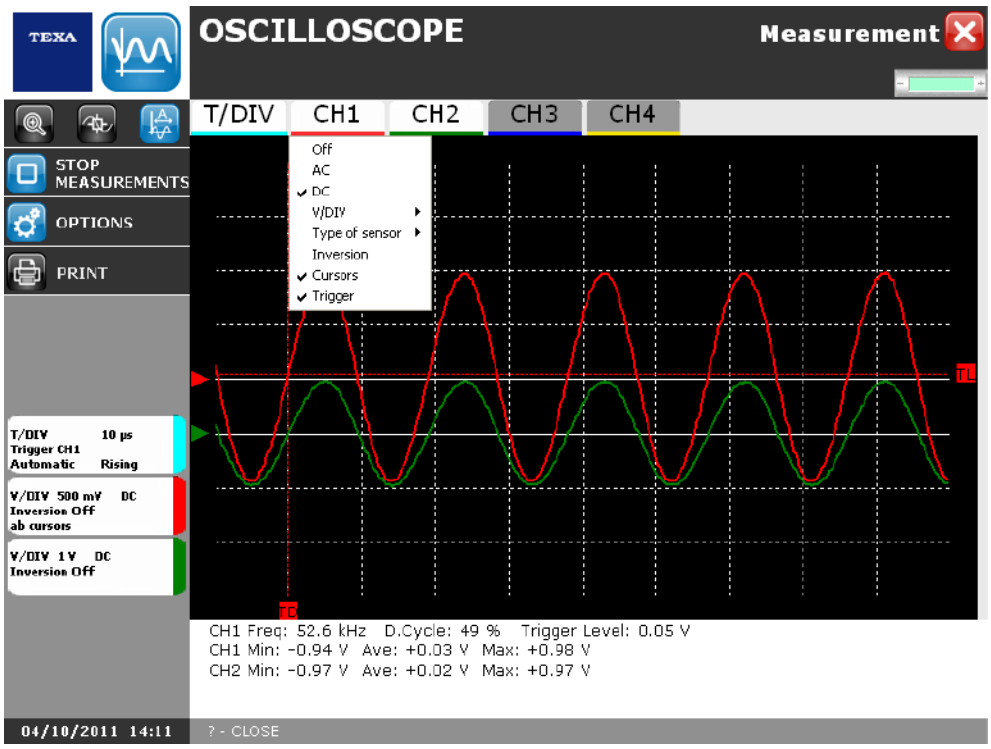


6.1.2 Channels

This function allows to access the options of the selected channel.

Proceed as follows:

1. Click on the icon of the desired channel (e.g.: CH1).
2. Select the desired option.



The options that can be selected in this screen are:

Option	**Description**
On / Off	Allows to activate / deactivate the measurement of the selected channel.
AC	Allows to set the current type that is going to be measured in alternate current.
DC	Allows to set the current type that is going to be measured in continuous current.
V/DIV - A/DIV	Allows to display the drop-down menu through which you can change the voltage / current scale.
Type of sensor	Allows to display the drop-down menu through which the attenuation value of the oscilloscope should be aligned to the one introduced by the probe and change the current scale.
Inversion	Allows to invert the wave shape of the signal.
Cursors	Allows to choose on which channel to set the cursors.
Trigger	Allows to choose on which channel to set the trigger.

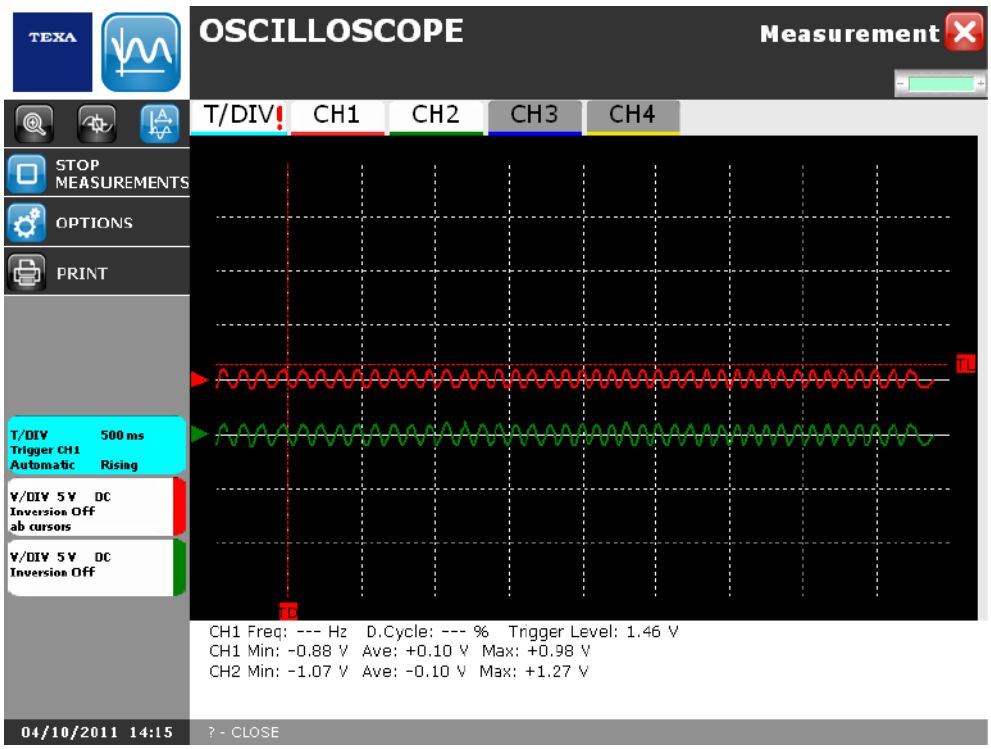
6.2 Autoscaling

This function allows to carry out the graph autoscale.

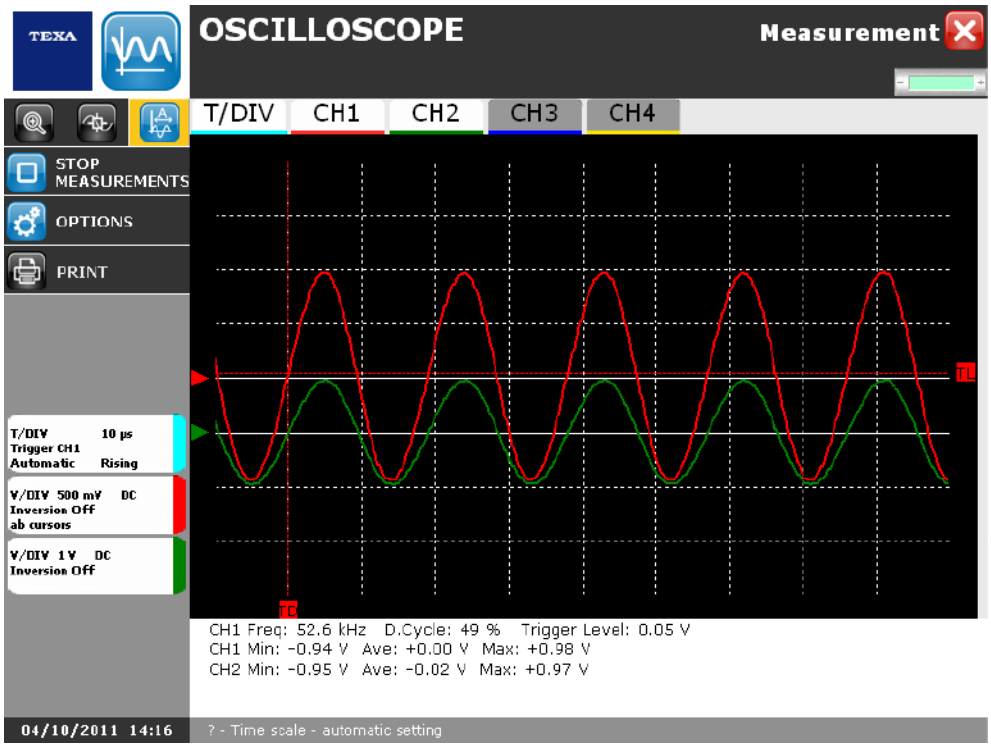
Proceed as follows:

1. Click on  .

Wait the autoscale operation.



The autoscale has been carried out.



6.3 ZOOM

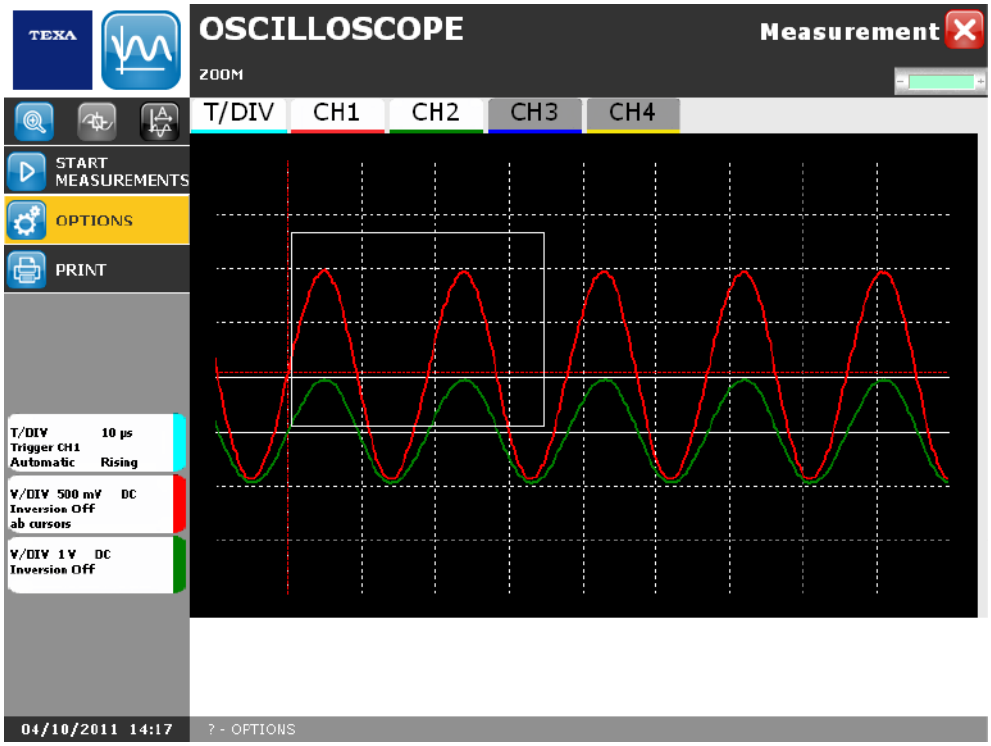
This function allows to zoom in an area on the graph.

To start the function you have to stop the measurement.

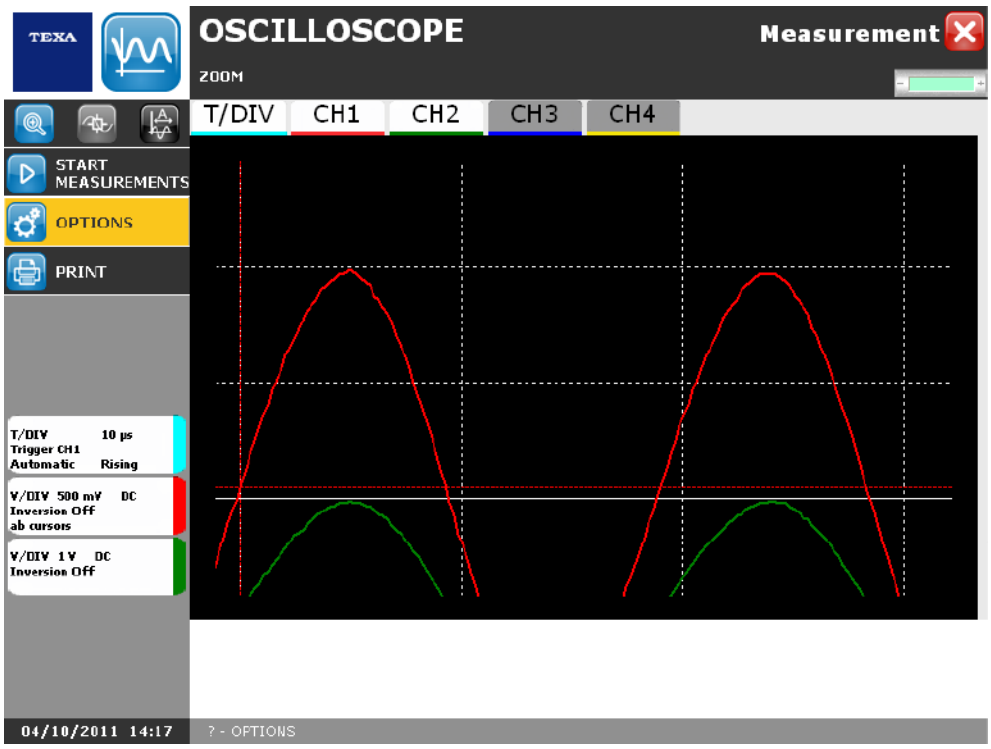
Proceed as follows:

1. Click on  .

2. Point the pen on the screen and drag it obliquely in order to create a selection area that will include the graph part you want to zoom in.



Zoom in carried out.



6.4 Cursors

Allows to know the signal value in the desired moment.

Cursors are positioned on CH1 by default.

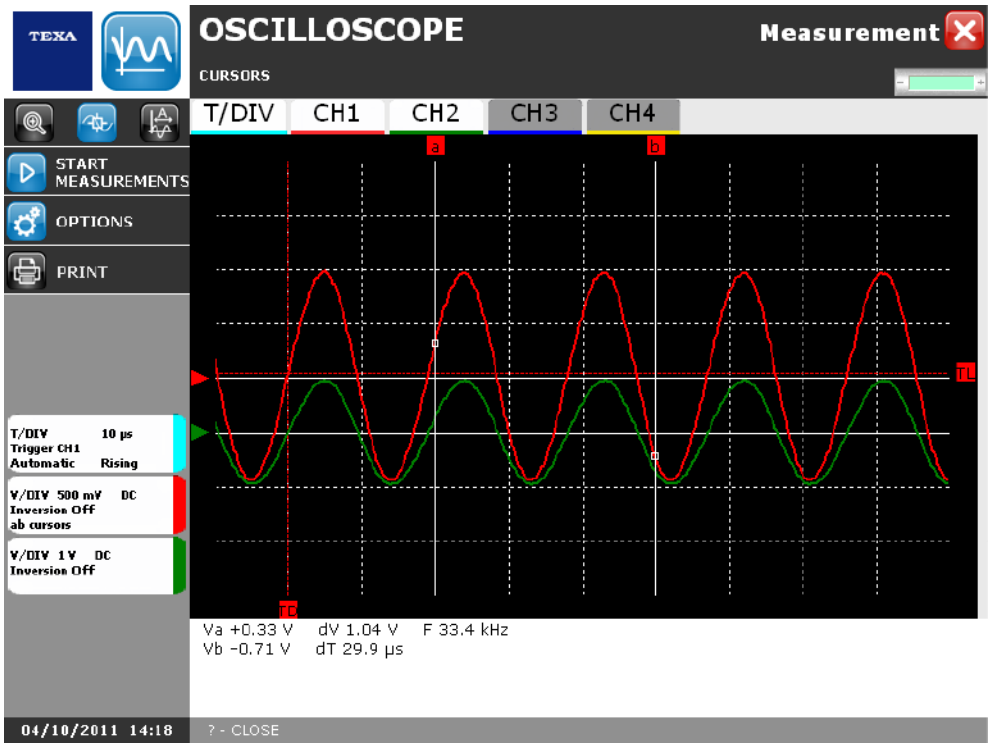
To position cursors on another channel click on the desired channel and tick the entry **Cursors**.

To start this function you have to stop the measurement.

Proceed as follows:

1. Click on .

2. Drag labels “a” and “b” (the cursors) along the signal until reaching the desired points.



The lower bar provides the following information:

Name	Description
Va / Aa	Indicates the voltage/current value detected in the point signalled by cursor “a”.
dV / dA	Indicate the difference between Va / Aa e Vb / Ab.
F	Indicates the signal frequency.
Vb / Ab	Indicates the voltage/current value detected in the point signalled by cursor “b”.

dT	Indicates the time interval elapsing bewteen the point in which the cursor “a” is positioned and the point in which the cursor “b” is positioned.

6.5 Options

This function allows you to access the function options.

Proceed as follows:

1. Click on  .
2. Select the option desired.

The options that can be selected in this screen are:

Name	Option	Description
Trigger	Passenger cars	The scan starts again automatically at the end of every scan also without a trigger event.
	Normal	The scan starts again only with a trigger event. At the end of the scan the trace is brought back to the initial point (on the left side of the screen) and waits for the following trigger event.
	Single	The software operates 40 scans only with particular trigger events. At the end of the scans you may check the sequence thanks to the specific keys.
Slope	Rising	Allows to synchronize the trigger on the rising signal.
	Falling	Allows to synchronize the trigger on the downward signal.
Grid	Visible	Allows to show the grid.
	Hidden	Allows to hide the grid.
Autoscaling	Amplitude	Allows to disable / enable the autoscale. If this option is not ticked the software informs you when the signal is out of range.
Colours	Background	Allows to select the background color.
	Grid	Allows to select the grid color.

3. Click on the icon  .

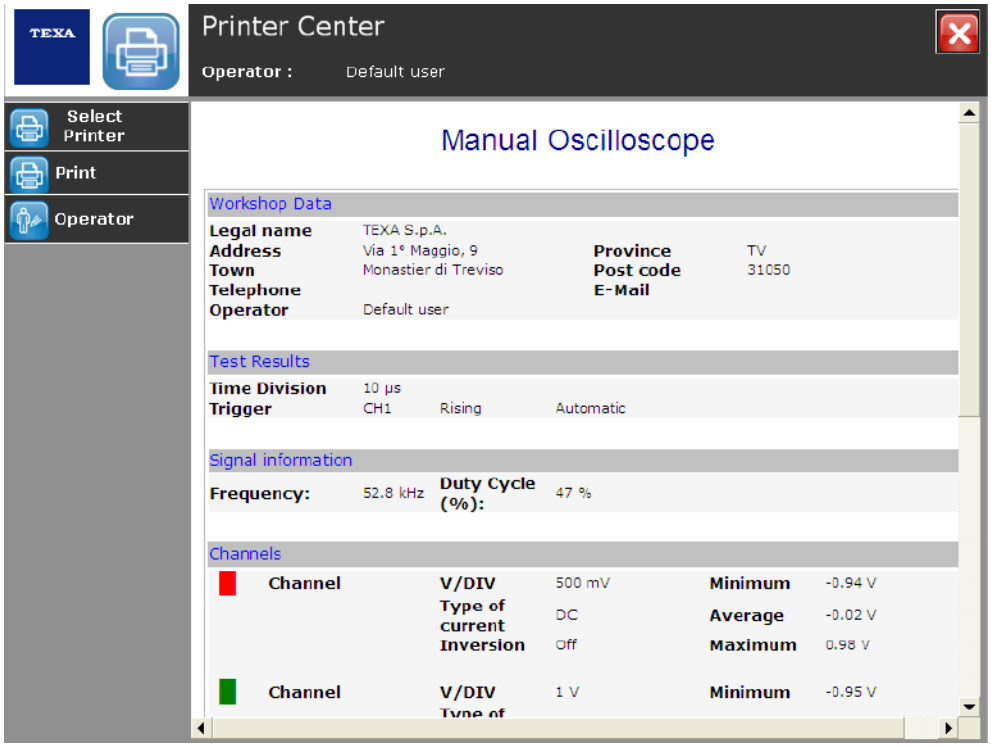
6.6 Print

This function allows you to print a report of the test that has been performed.

To start this function you have to stop the measurement.

Proceed as follows:

1. Click on .
2. Click on .



The print function is launched.

For more information check the corresponding chapter.

7 CAN NETWORK

This function allows you to perform the diagnosis on the vehicle's CAN network.

The types of BUSES on which you can perform the diagnosis are:

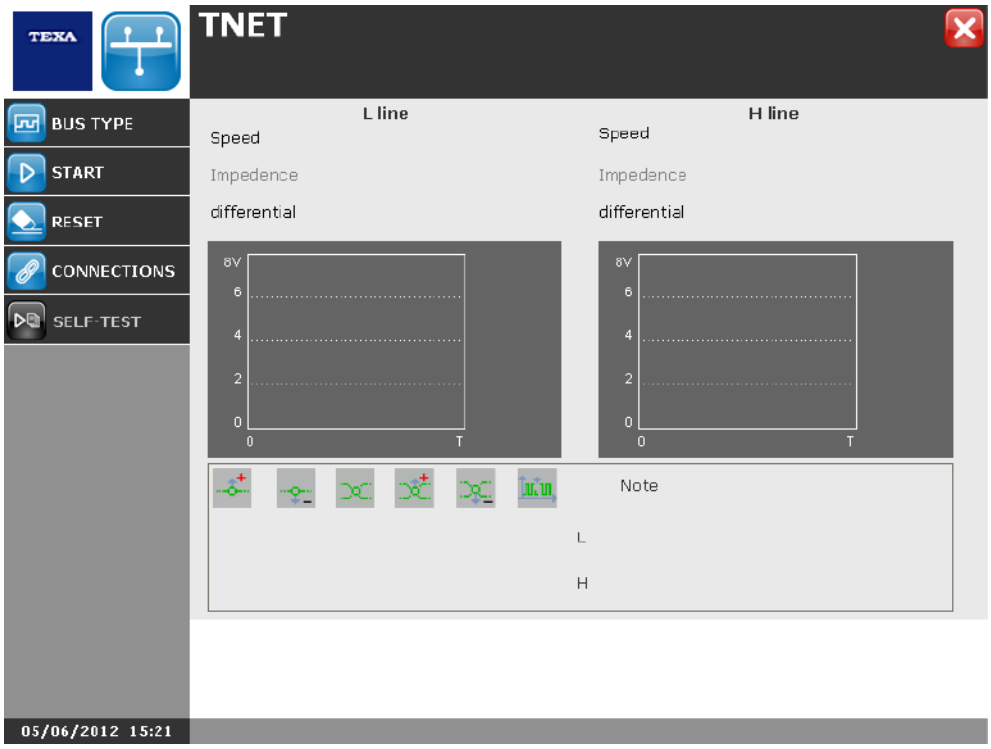
- *Two-wire CAN with HIGH SPEED BUS.*
- *Two-wire CAN with LOW SPEED BUS.*
- *SINGLE WIRE CAN with LOW SPEED BUS.*

The HIGH SPEED BUS has a frequency above 125 Kbit/s, while the LOW SPEED BUS has a frequency below or equal to 125 Kbit/s.

The function allows you to verify:

- *The presence of short-circuits.*
- *The presence of cut-offs.*
- *The lack of termination resistance.*
- *Etc.*

Configure the device properly before launching the function.



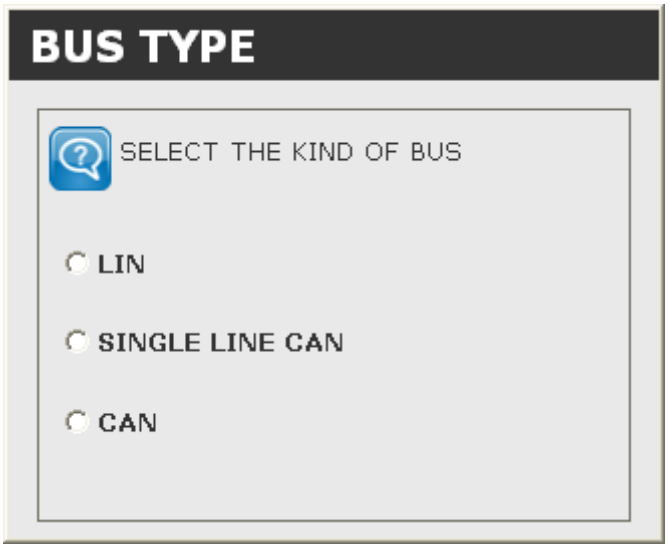
Icon	Name	Description	Notes
	BUS type	It allows you to select the type of BUS on which you intend to carry out the test.	--
/	Start / Stop	It allows you to launch the diagnosis of the BUS.	--
	Reset	It allows you to reset the parameters.	--
	Connections	It allows you to start the video that illustrates how to connect the probes.	--
	Self-test	It allows you to carry out the self-test.	The function can be started only by configuring a device with a TNET module.

7.1 BUS type

This function allows you to select the type of BUS on which you intend to carry out the test.

Proceed as follows:

1. Click  .
2. Tick the box that corresponds to the requested BUS type.



The BUS is properly configured.

7.2 Start Test

This function allows you to perform the diagnosis on the vehicle's CAN network.

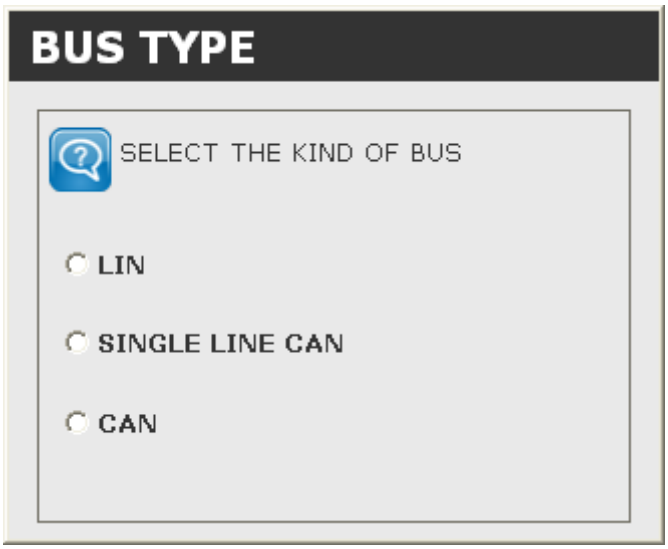
Proceed as follows:

1. Click .

2. Tick the box that corresponds to the type of BUS on which you intend to carry out the test.

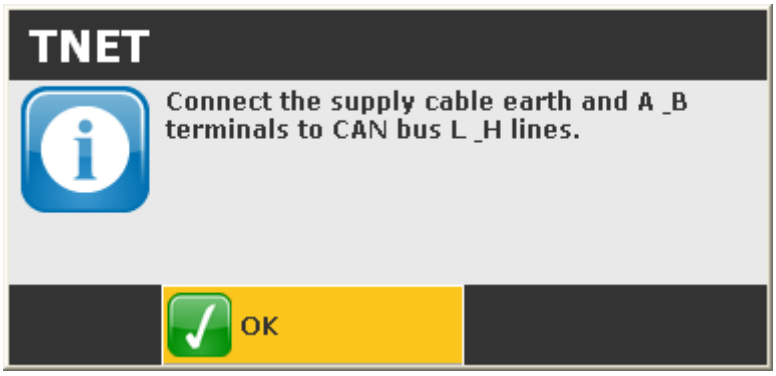
NOTE

This screen is displayed only if you did not select the type of BUS before starting the test.

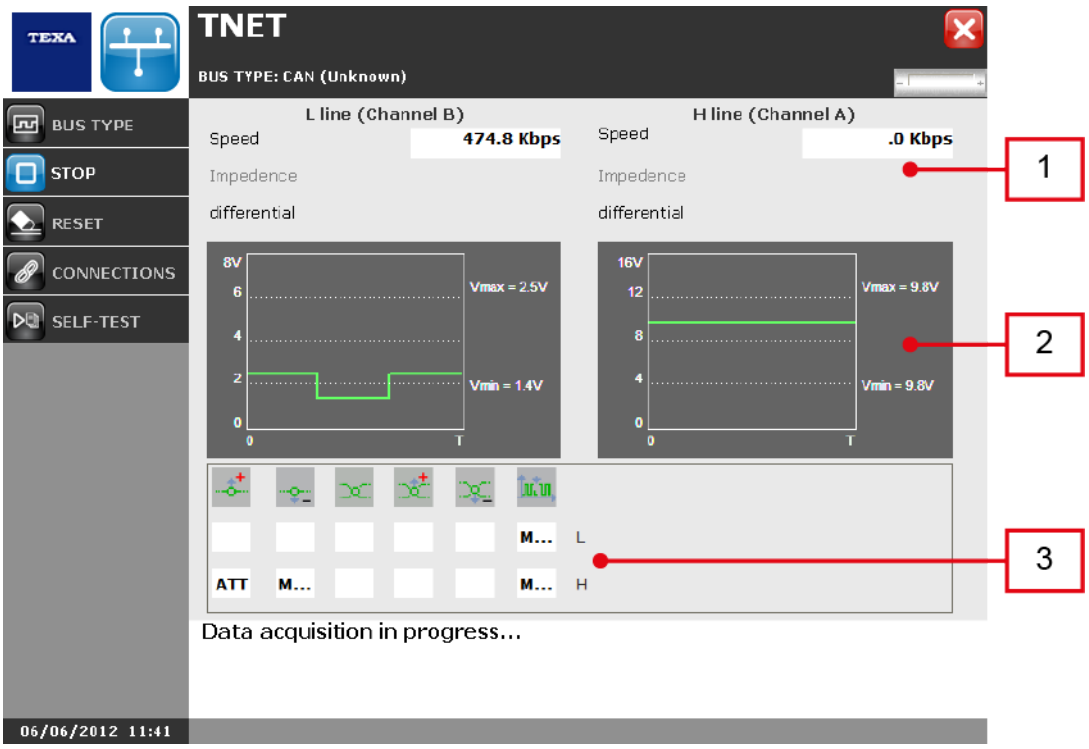


2. Follow the instructions that appear on the screen.

3. Click .



The test is initiated.



The screen provides the following information:

1. **Measurements:** *it indicates the acquired parameters (frequency, impedance and differential).*
2. **Graphs:** *it graphically represents the voltage values of the two CAN lines.*
3. **Errors:** *it indicates the presence and the type of possible errors detected.*

7.2.1 Measurements

In the fields in the **Measurements** section, the software provides the following parameters:

Parameter	**Unit of measurement**
Frequency of the L and H lines	Kbit/s
Impedance of the L and H lines	Ohm
Differential of the L and H lines	Ohm

7.2.2 Graphs

The **Graphs** section provides a graphic representation of the voltage values in the **CAN L** and **H** lines.

The maximum and minimum voltage values detected in the two lines are also provided.

The software uses the colour green to indicate the waveforms that have a frequency above 100 Kbit/s and the colour yellow for those that have a frequency below or equal to 100 Kbit/s.

7.2.3 Errors

The chart in the **Errors** section indicates the type of error and the line (or lines) in which the error was detected.

The types of detectable errors are:

Icon	Error
	Short circuit to positive.
	Short circuit to ground.
	Cut-off.
	Short circuit to positive of the L and H lines.
	Short circuit to ground of the L and H lines.
	Short circuit of the L and H lines.

The first three errors can occur only on one line at a time.

The last three errors occur on both lines simultaneously.

The detected errors are marked by the abbreviations:

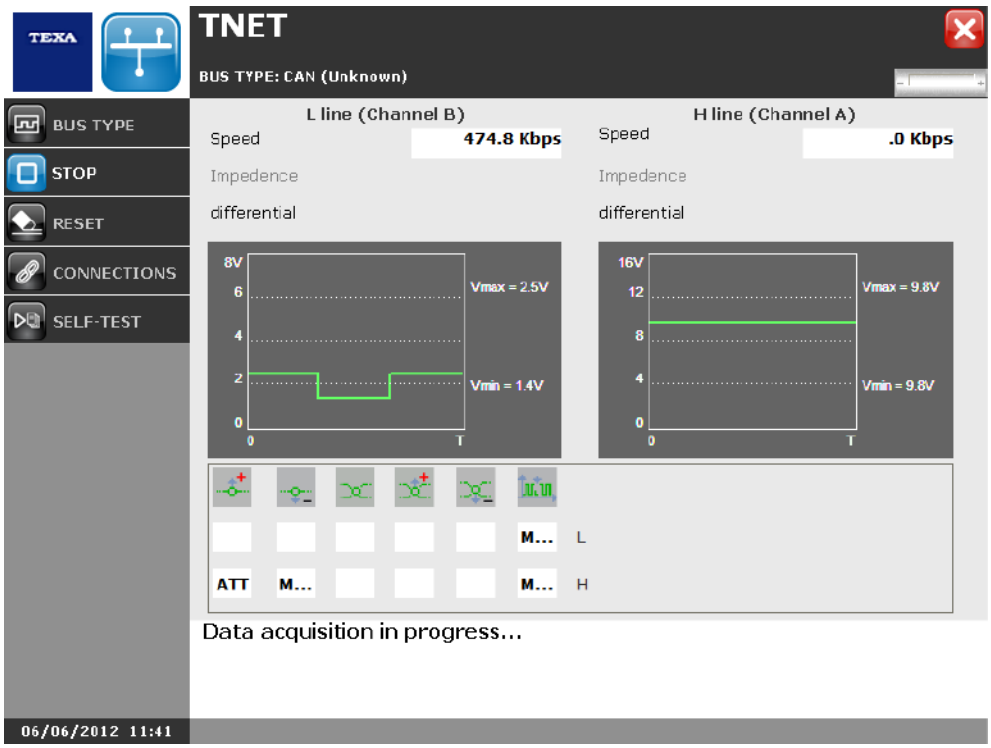
Abbreviation	Description
ATT	The detected error is currently present.
MEM	The error occurred but it is not present at the moment.

7.2.4 View the Description of an Error

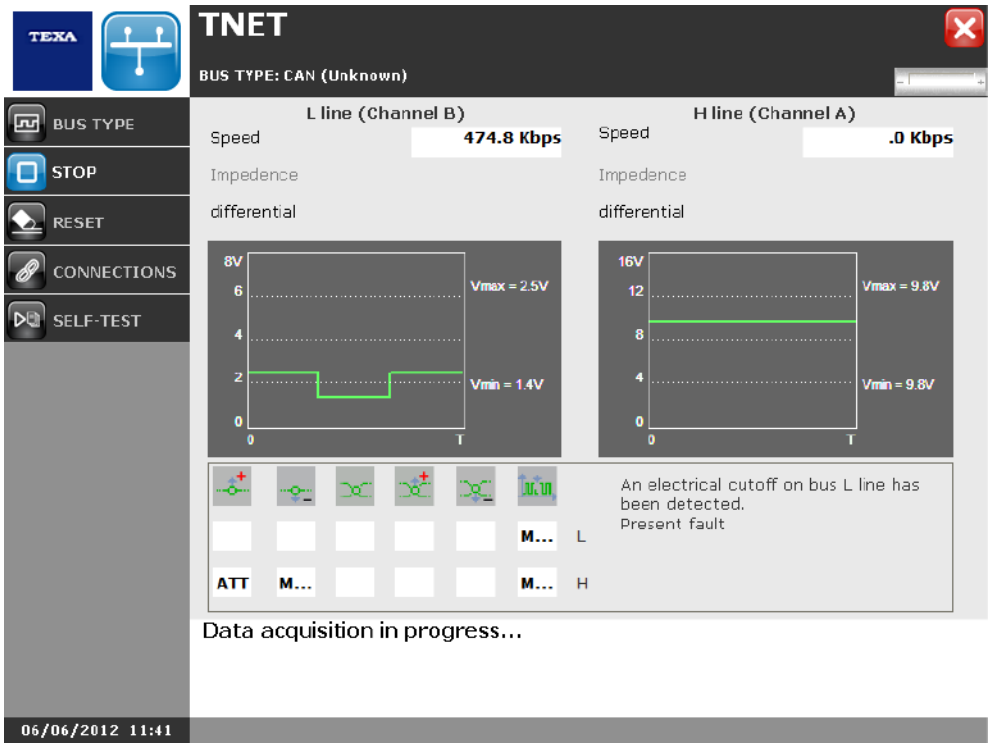
This function allows you to view the description of an error.

Proceed as follows:

1. Click on the requested error.



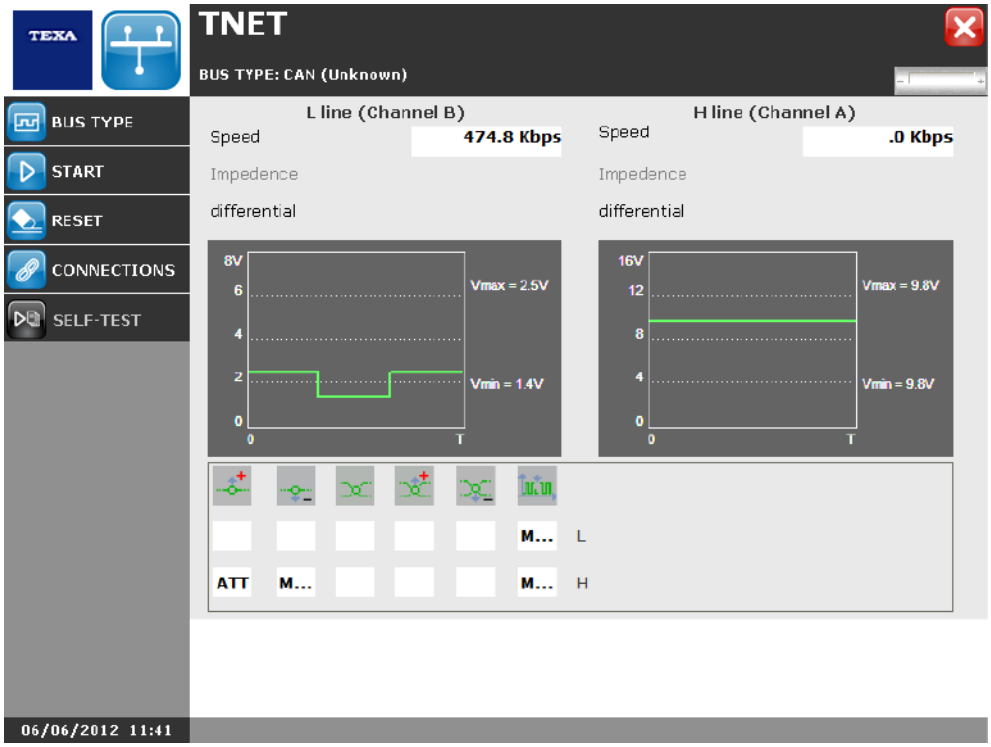
The description of the error is displayed.



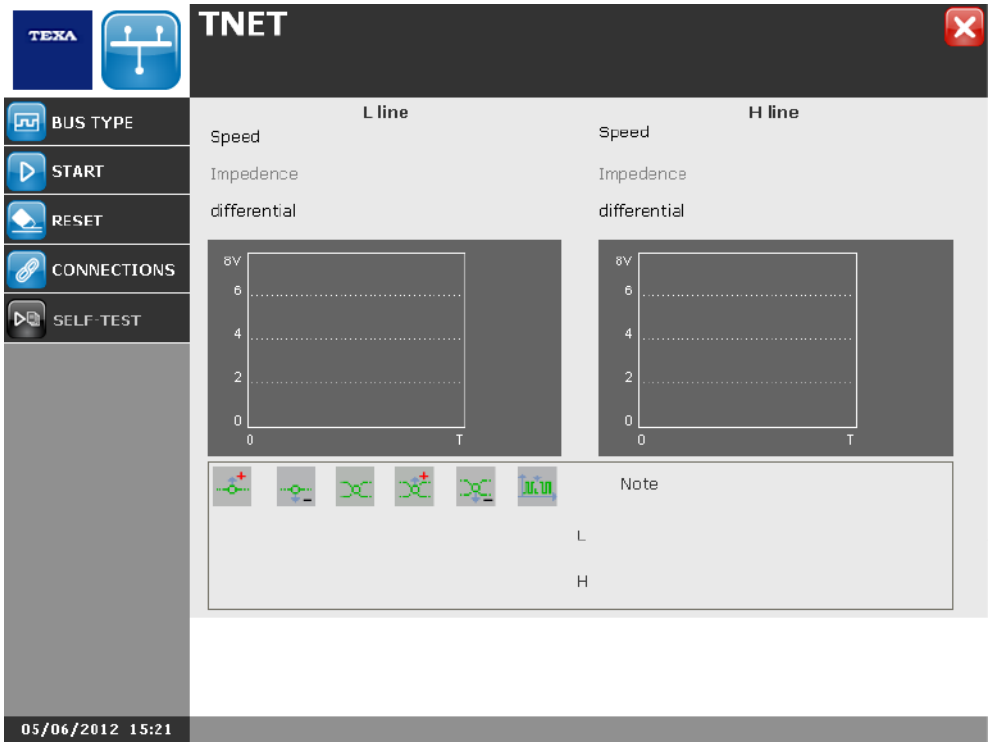
7.3 Reset

This function allows you to reset the parameters.

1. Click  .



The parameters are reset.



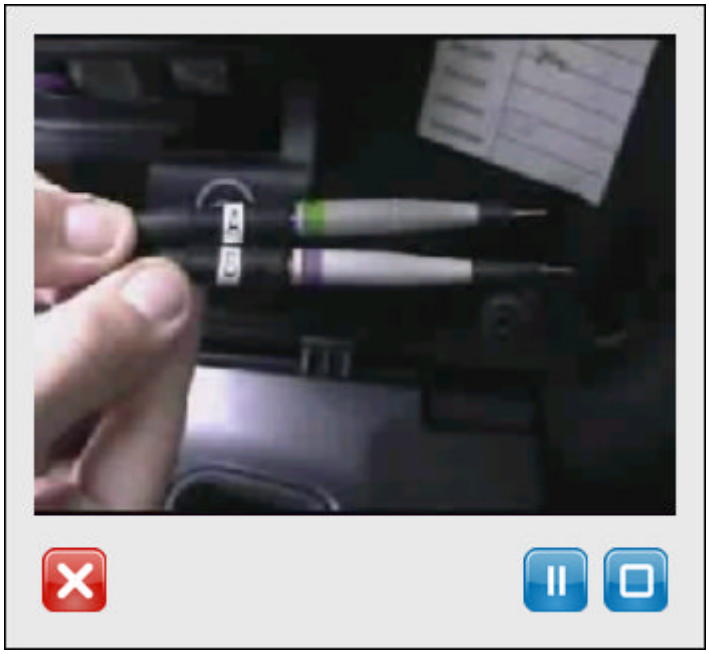
7.4 Connections

This function allows you to start the video that illustrates how to connect the probes.

Proceed as follows:

1. Click  .

The video is started.



Icon	Name	Description	Notes
	Play / Pause	It allows you to start / pause the video.	--
	Stop	It allows you to stop the video.	--

8 AUTOMATIC CONFIGURATION

This function allows you to launch the automatic procedure for device configuration.

The configuration of any device or set of devices must always follow the procedure described below:

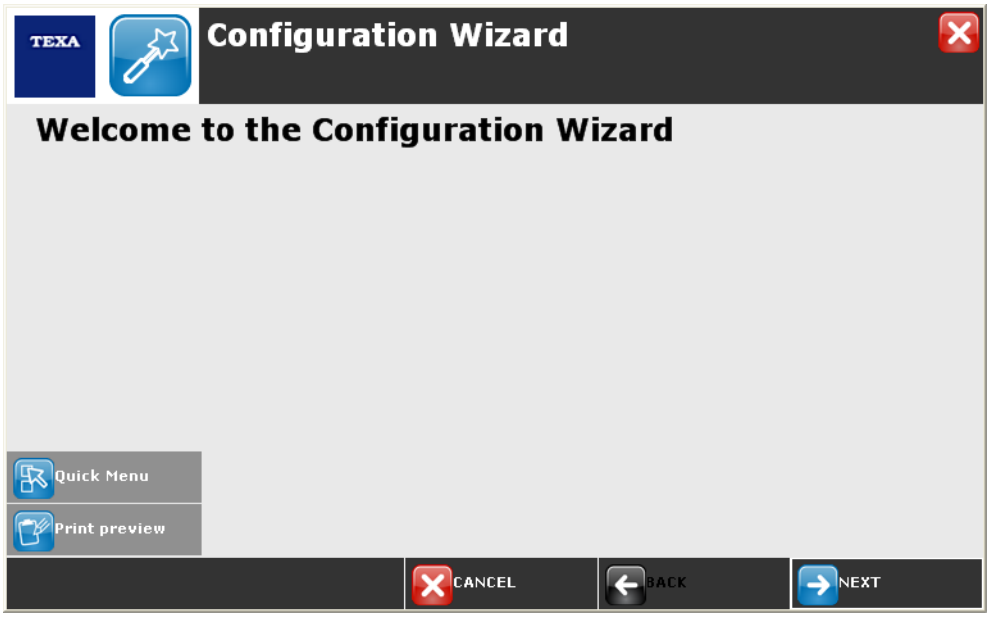
- *Device selection*
- *Selection of the type of communication (serial, USB, Bluetooth).*
- *Activation of the communication with the device (COM port assignment).*

These passages are repeated for every device that you wish to configure and for every function that you want to associate.

Proceed as follows:

1. Click on  .
2. Click on item **Automatic config.**

The first screen of the configuration procedure for the devices is displayed.



Icon	Name	Description	Notes
	Quick Menu	Allows you to carry out a configuration specifically and exclusively for the functions desired.	--
	Print Preview	Allows you to view the report of the configurations carried out.	--
	Delete Configuration	Allows you to delete the configurations previously carried out.	This icon appears only after having ticked at least a function.

	Cancel	Allows you to quit the function.	--
	Back	Allows going back within the procedure.	--
	Next	Allows progressing in the procedure.	--

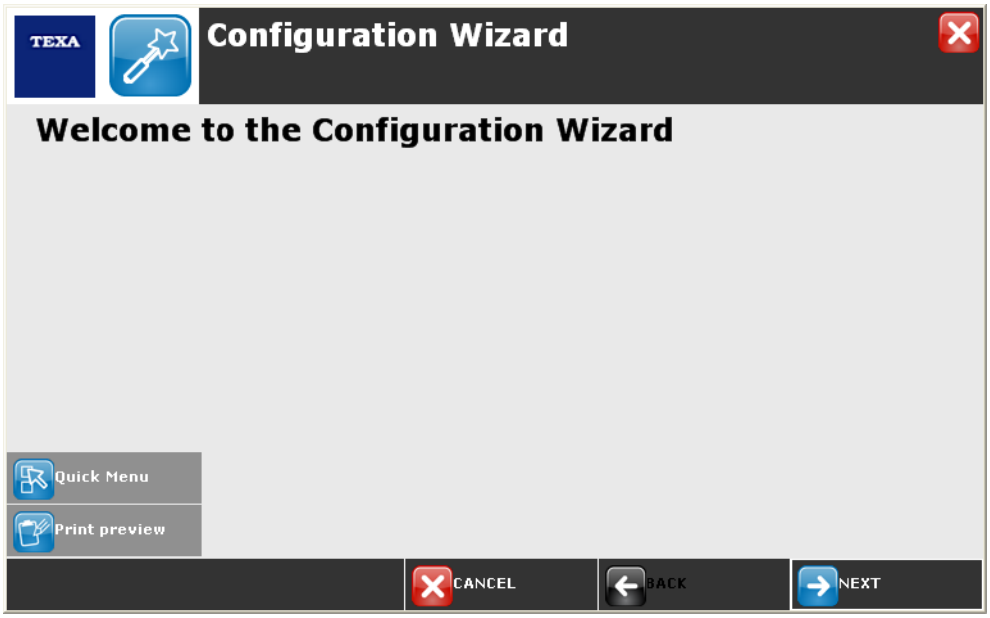
8.1 Quick Menu

This function allows you to carry out a configuration specifically and exclusively for the functions desired.

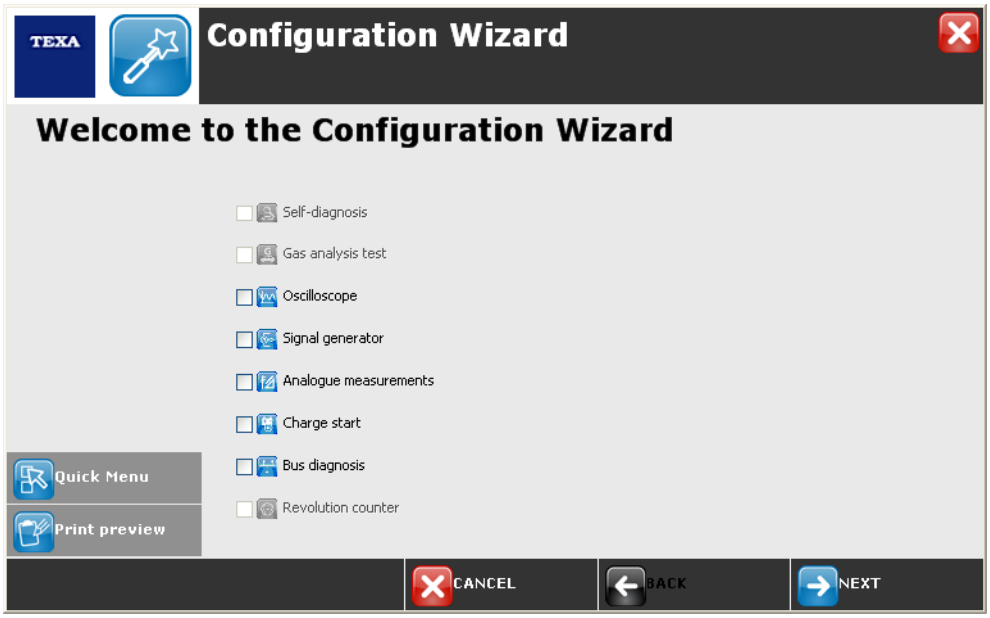
Quick Menu allows you to shorten the configuration procedure and carry out only the steps related to the function for which you wish to configure the device.

Proceed as follows:

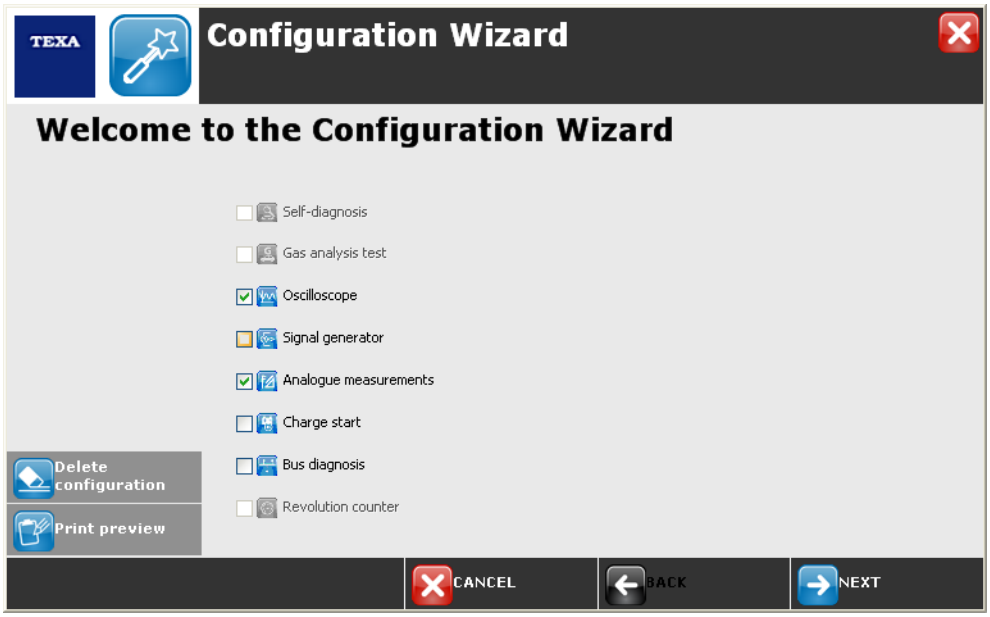
1. Click on  .



2. Select the functions desired.



3. Click on .



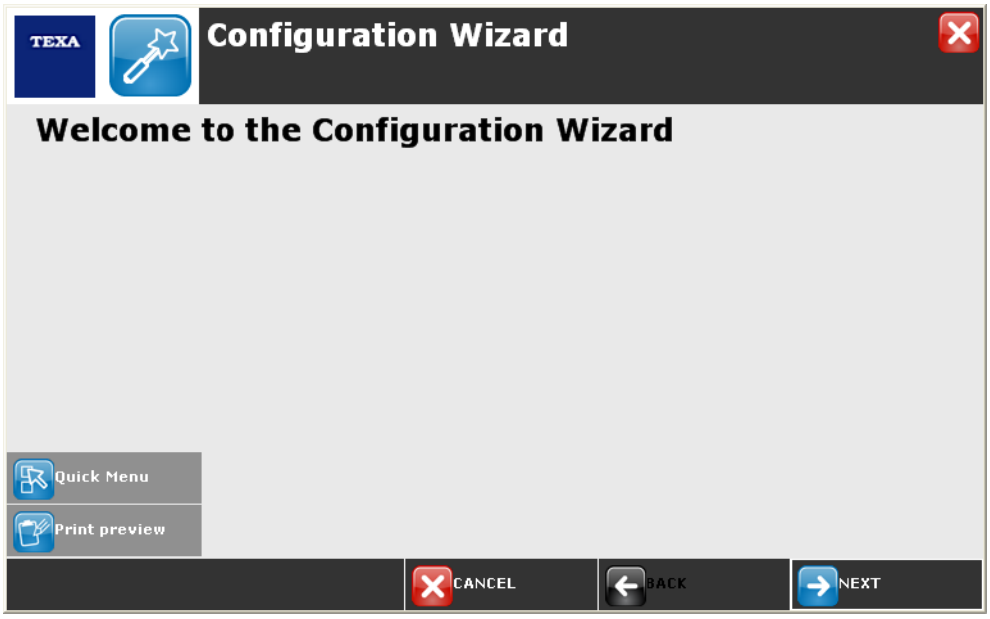
The procedure is launched only for the functions selected.

8.2 Print Preview

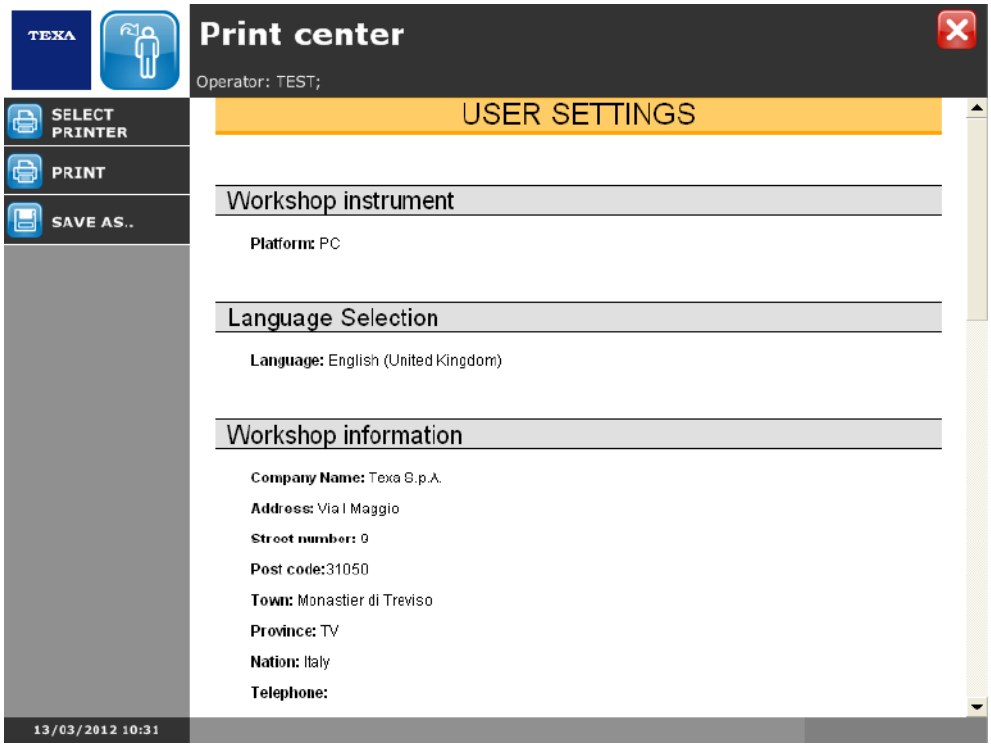
This function allows you to view the report of the configuration carried out.

Proceed as follows:

1. Click on  .



A printable report is displayed with the information relative to the last configuration carried out.



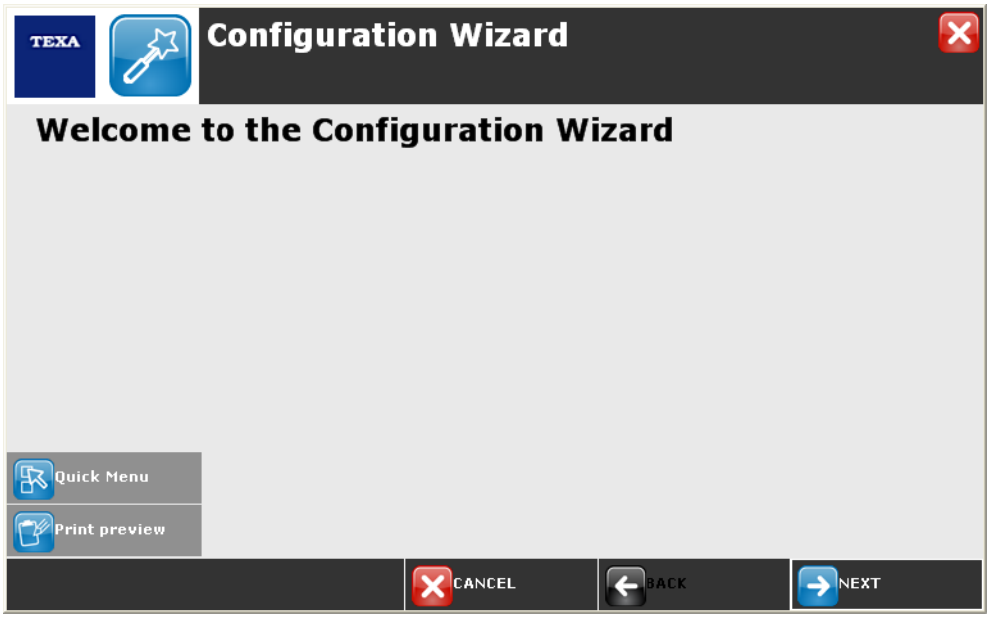
8.3 Delete Configuration

This function allows you to partially or entirely delete the configuration carried out.

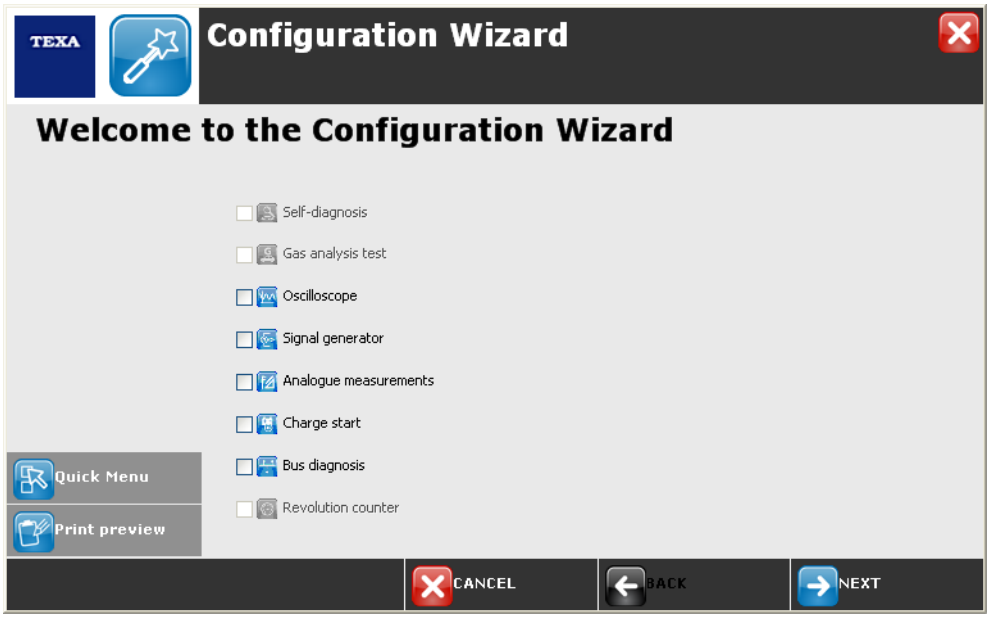
(*) The icon that corresponds to this function only appears after at least one function is selected.

Proceed as follows:

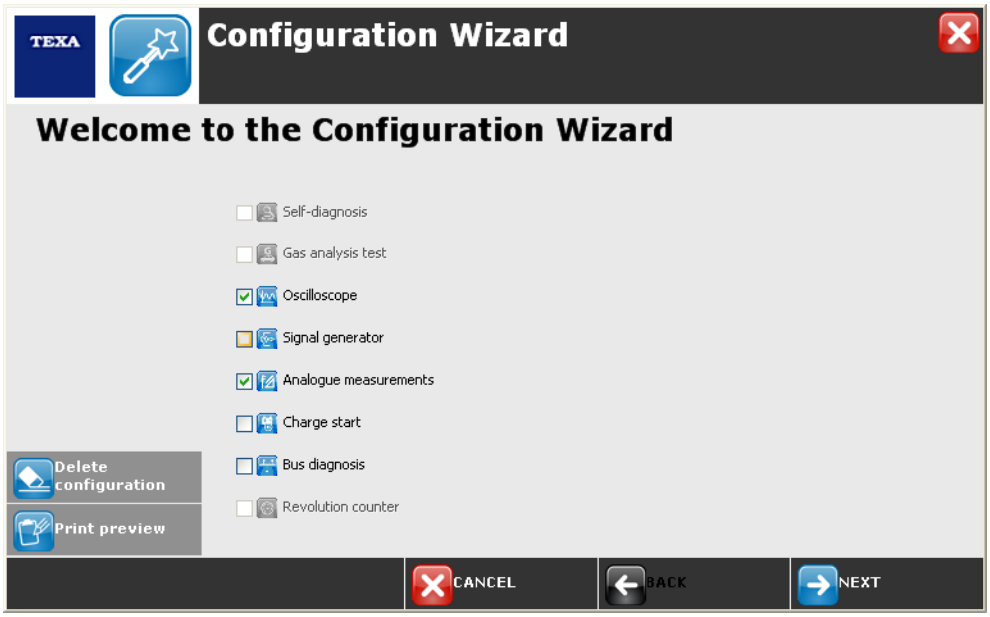
1. Click on  .



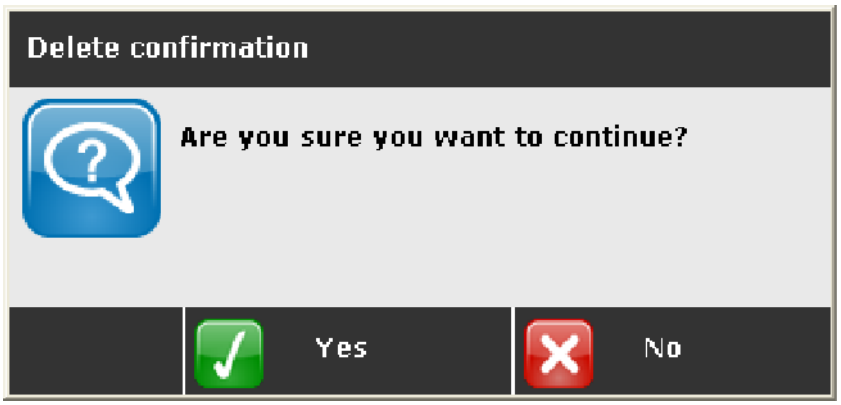
2. Select the functions desired.



3. Click on .



4. Click on .



The configurations are deleted.

8.4 Configuration Procedure

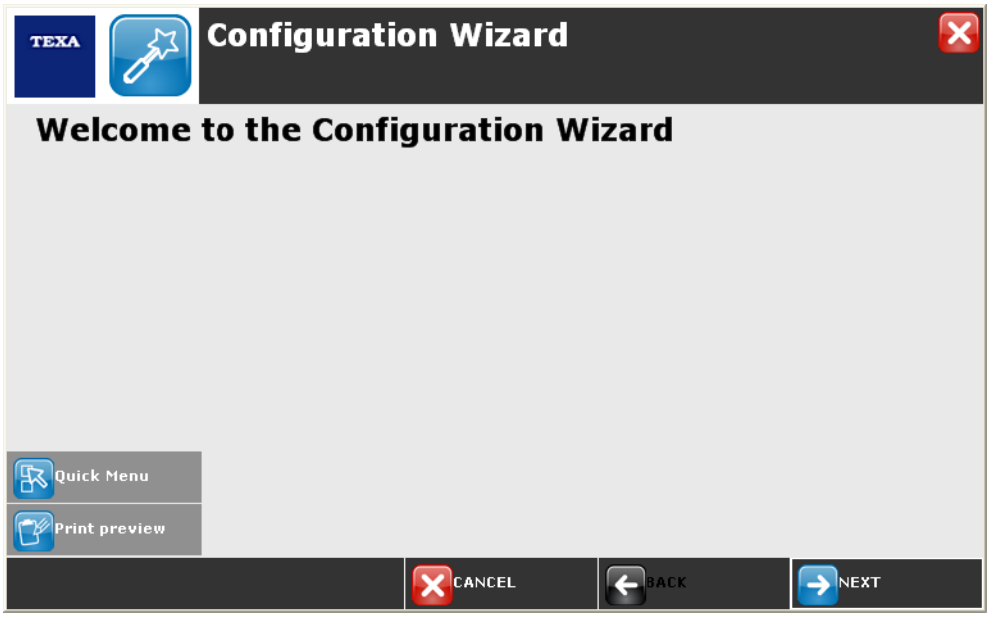
Here is an example of a configuration:

- *Display unit: PC.*
- *Device: multifunction device.*
- *Functions: oscilloscope, start - recharge.*
- *Type of communication: Bluetooth.*

The configuration of any device or set of devices is identical to the example given below.

Proceed as follows:

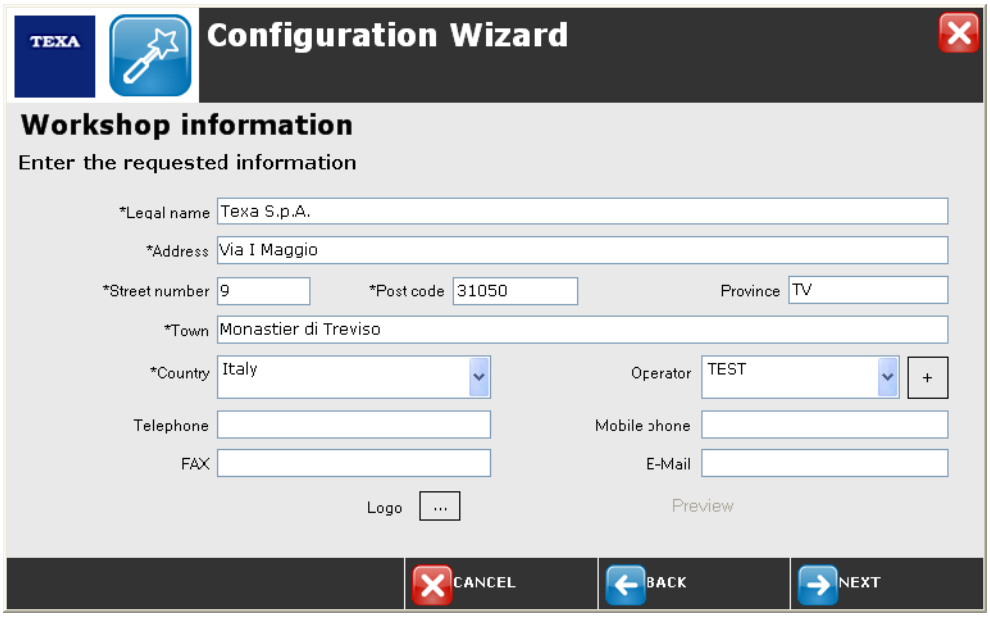
1. Click on  .



2. Enter the required data in the appropriate fields.

The fields marked with the symbol * are mandatory.

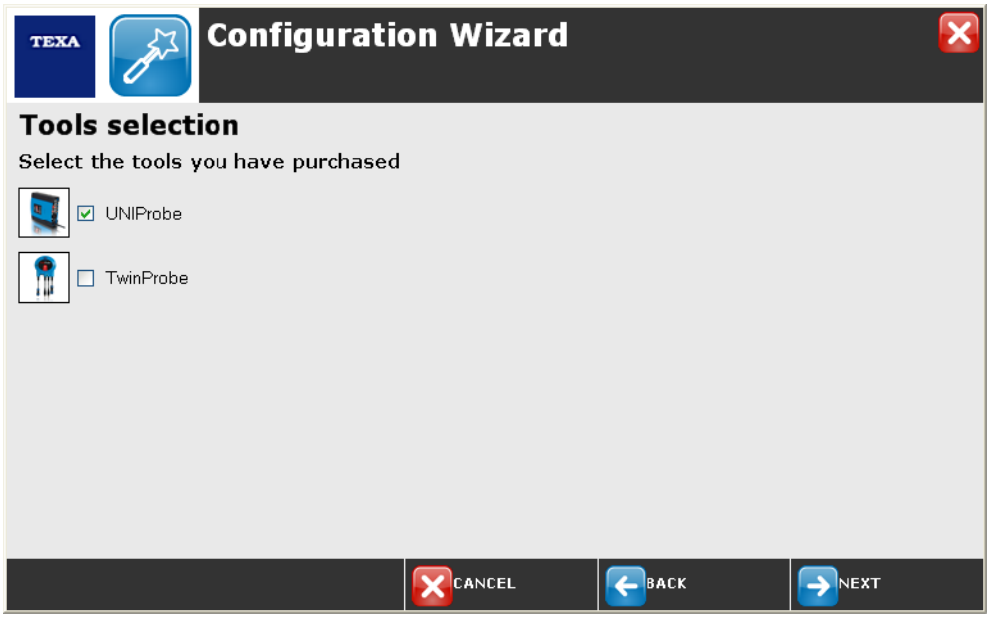
3. Click on .



The data entered in this screen appear as a heading in the reports of the tests carried out.

4. Select the desired device.

5. Click on .

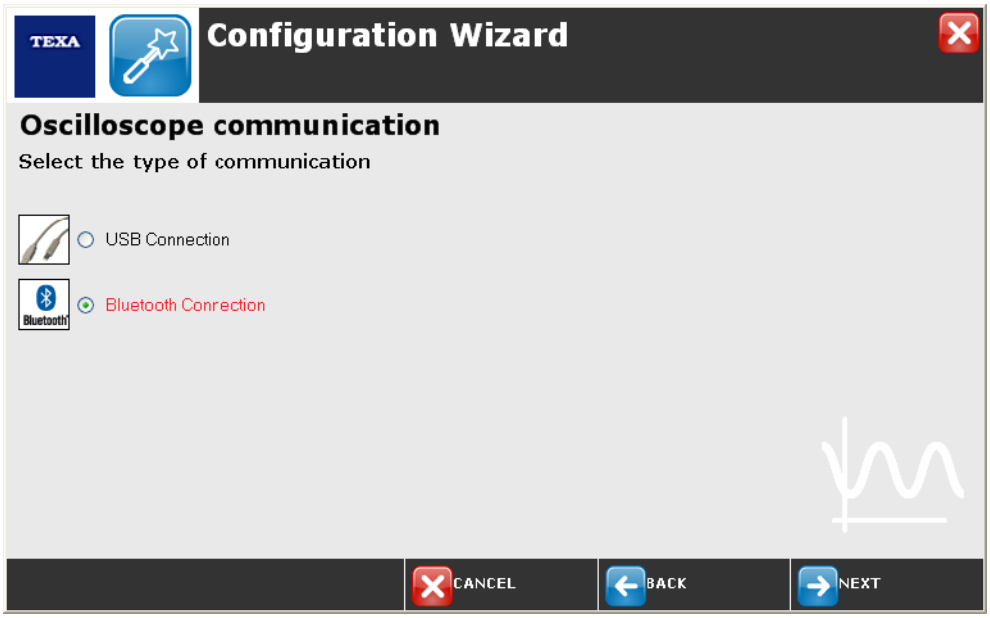


6. Select the desired device.

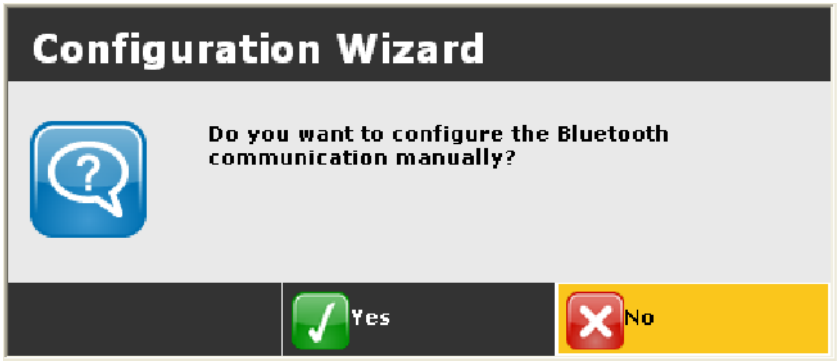
7. Click on  .

8. Select the type of communication desired.

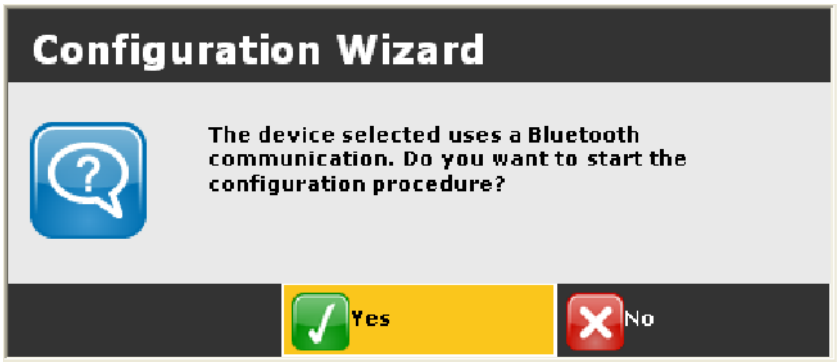
9. Click on  .



10. Click on icon **No**.

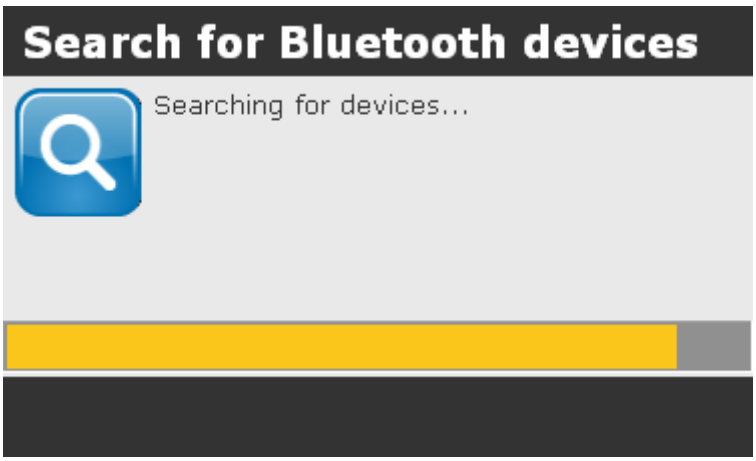


11. Click on icon **Yes**.



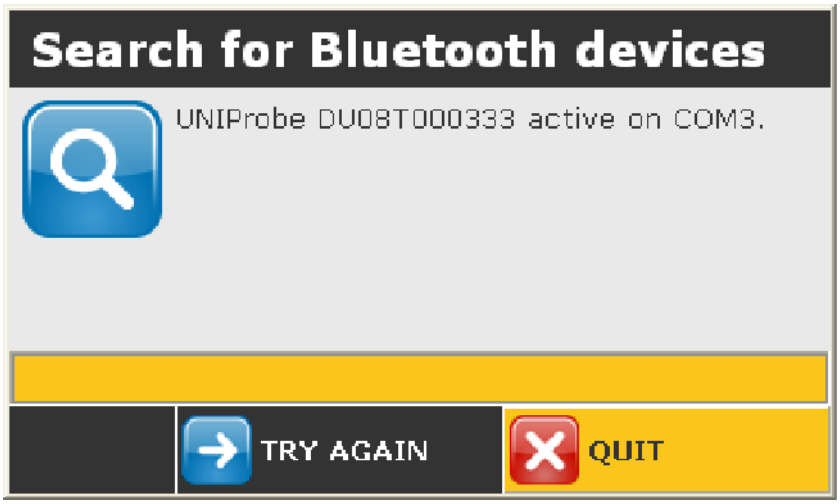
12. Follow the instructions on the screen.
13. Click on icon **Ok**.

Wait for the "device search" to end.



14. Click on .

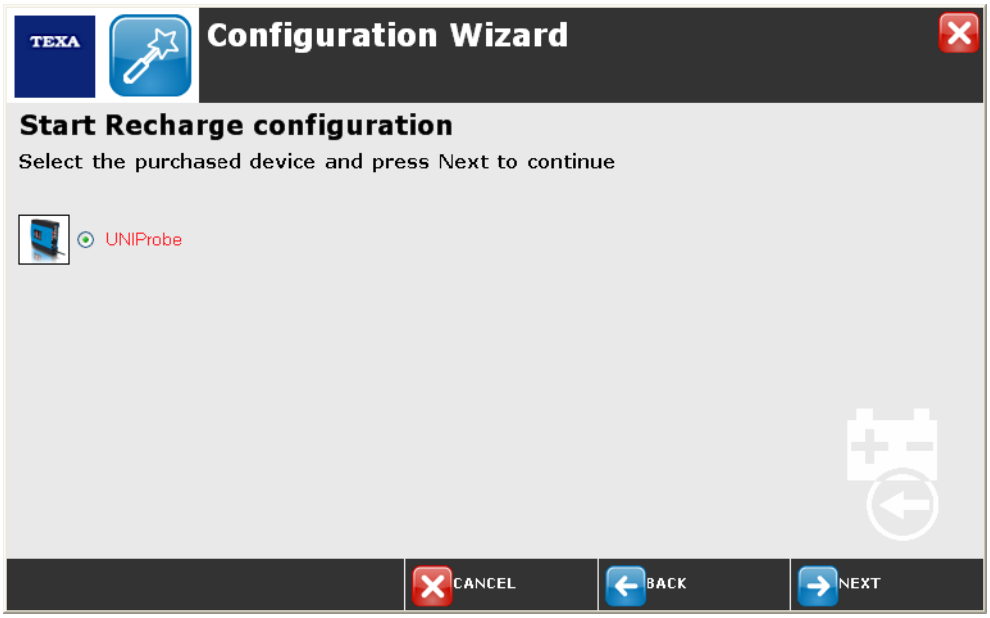
If the device found is not the one you wish to use, click on the pop-up window.



15. Click on .

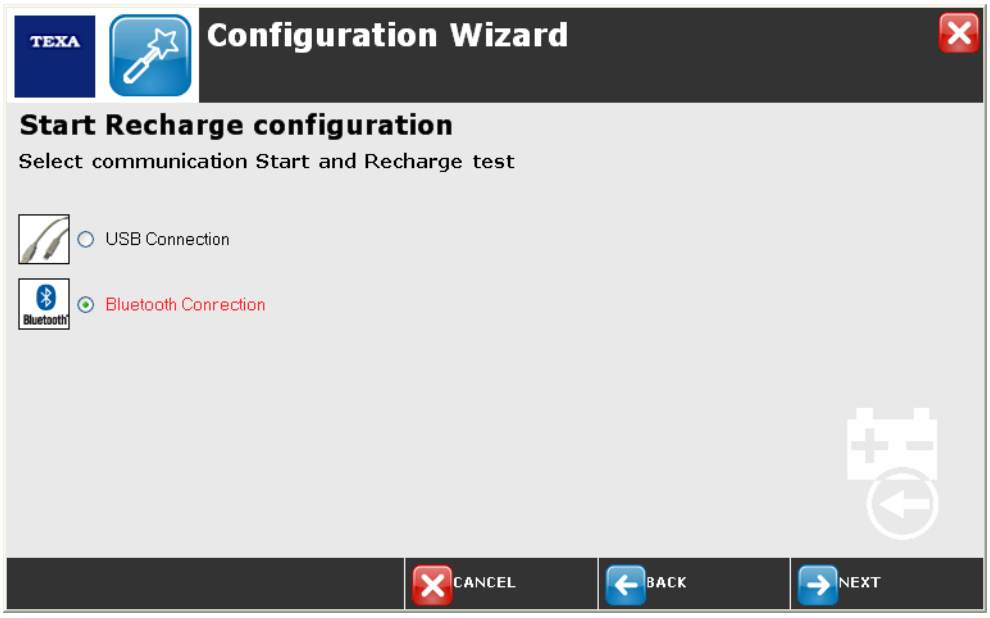
16. Select the desired device.

17. Click on .



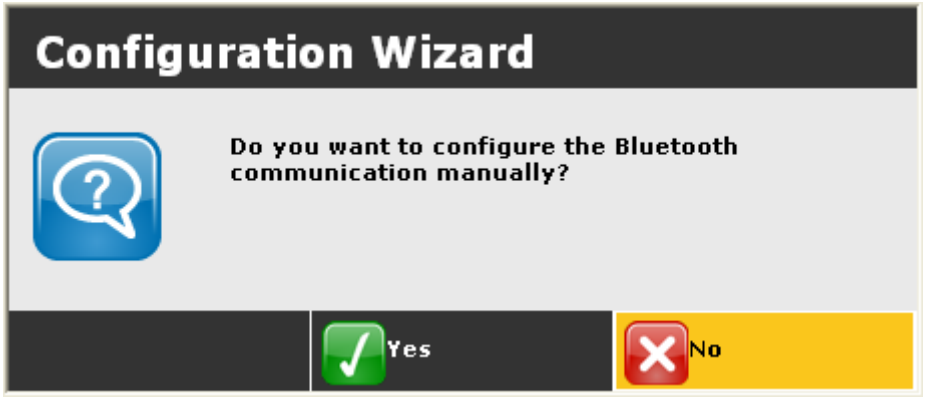
18. Select the type of communication desired.

19. Click on  .

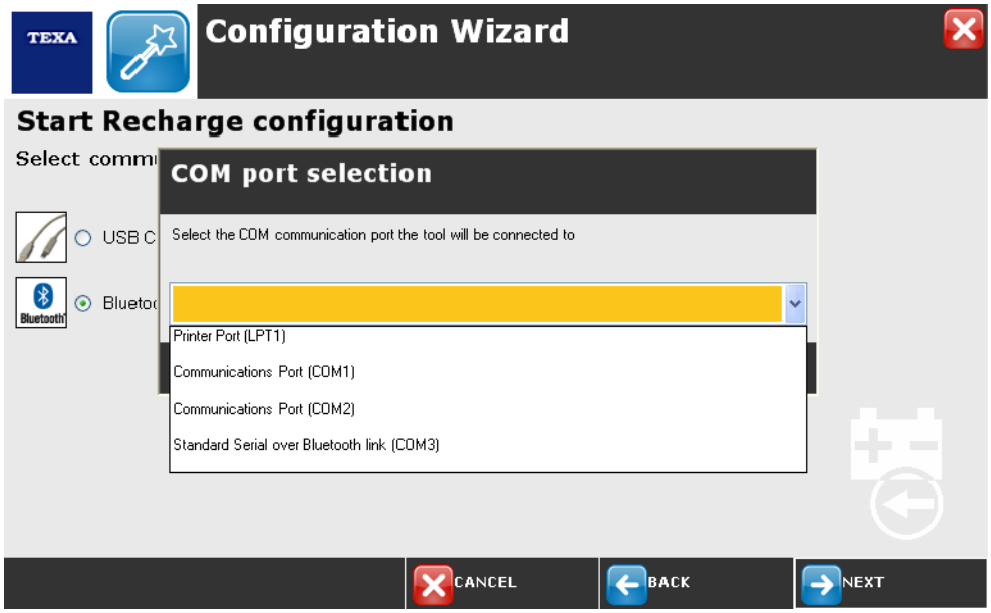


20. Click on the icon **Yes**.

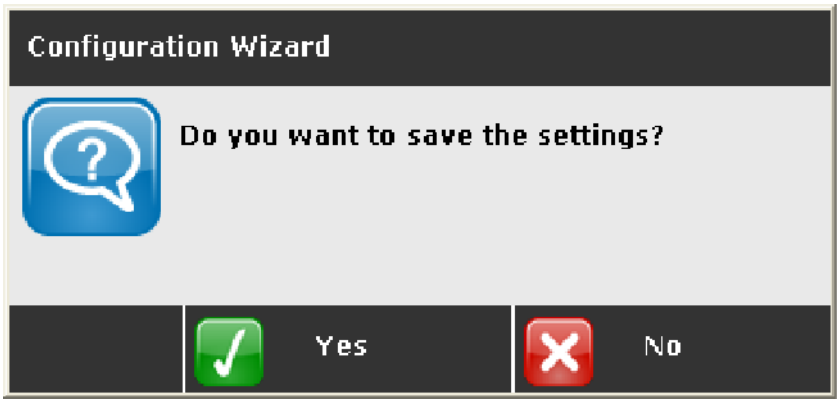
The manual assignment of COM is possible because a COM has already been assigned in the configuration phase for OSCILLOSCOPE function.



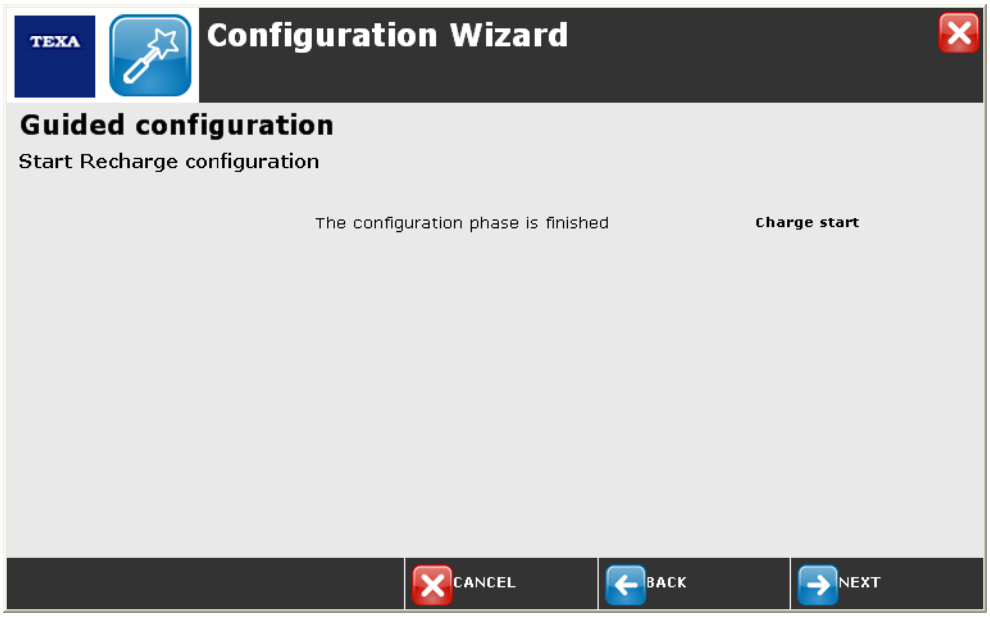
21. Open the drop-down menu.
22. Select the desired COM port.
23. Click on .



24. Click on .



25. Click on .



26. Click on .

The option to view the report relative to the configuration carried out is selected by default (a tick appears in the box).

If you do not wish to view the report, simply remove the tick.

9 BLUETOOTH CONFIGURATION

This function allows you to configure the communication between the software and the Bluetooth devices.

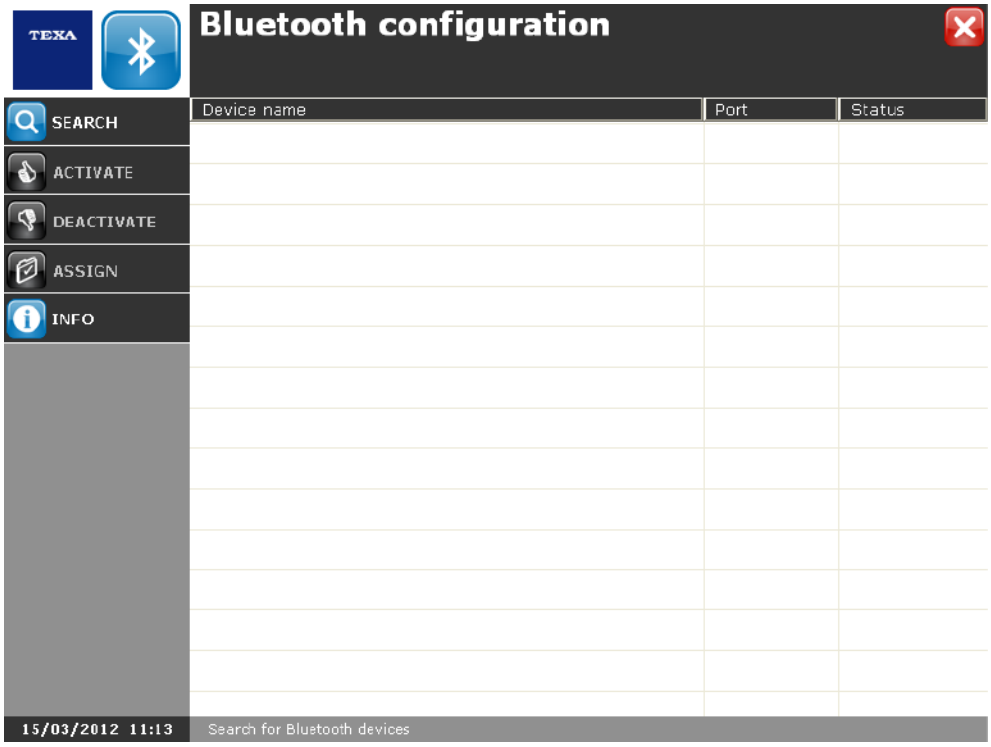
This function is particularly useful in checking the connection of a device should communication problems occur.

Always use the **Automatic Configuration** option when configuring the tools in the workshop.

Proceed as follows:

1. Click on  .
2. Click on item **Bt-Config**.

The screen for the configuration of the Bluetooth devices is displayed.



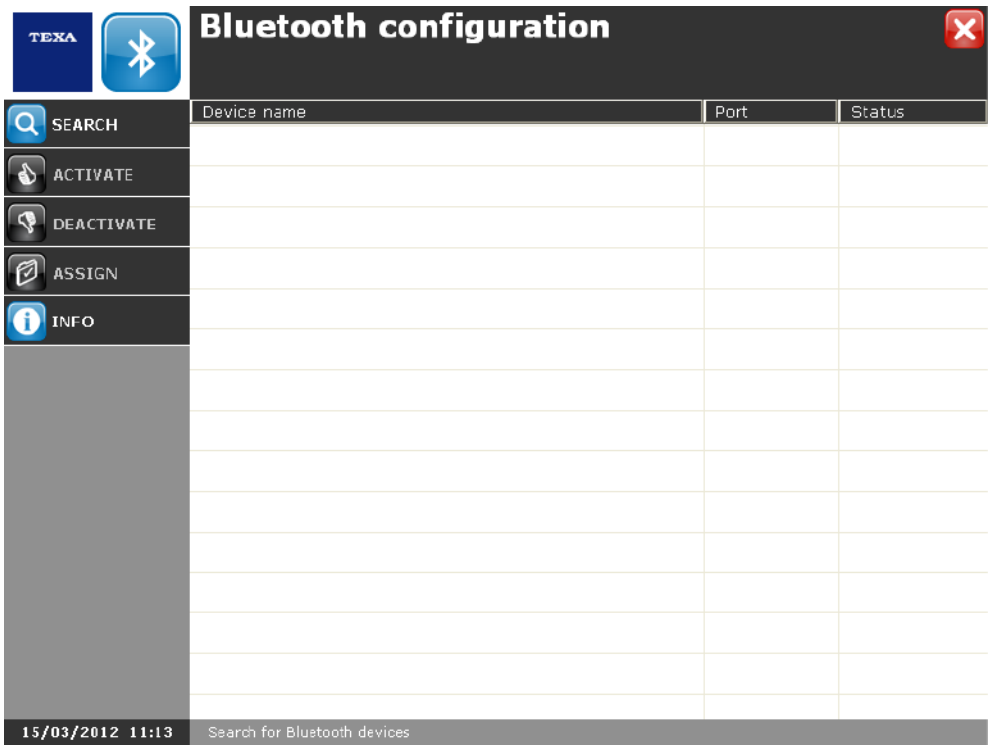
Icon	Name	Description	Notes
	Find	Allows you to search for Bluetooth devices.	--
	Activate	Allows you to enable the communication with the selected device.	--
	Deactivate	Allows you to disable the communication with the selected device.	--
	Assign	Allows to assign the selected device to a specific function.	--

	Info	Allows you to view information regarding the Bluetooth stack.	--

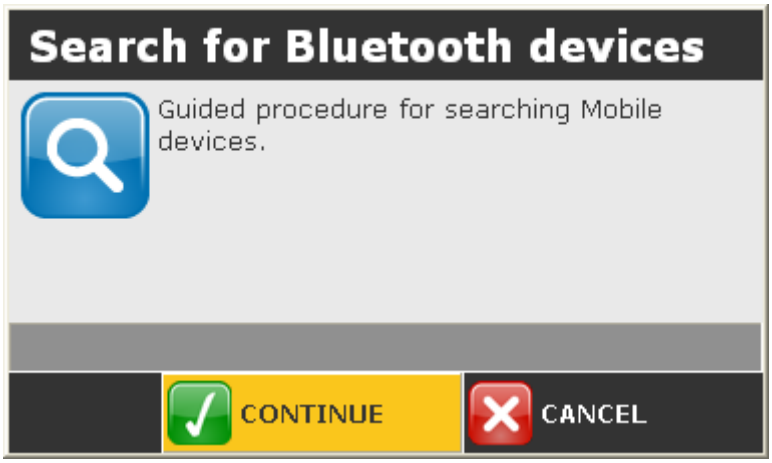
9.1 Find

This function allows you to search for Bluetooth devices.
Proceed as follows:

1. Click on .

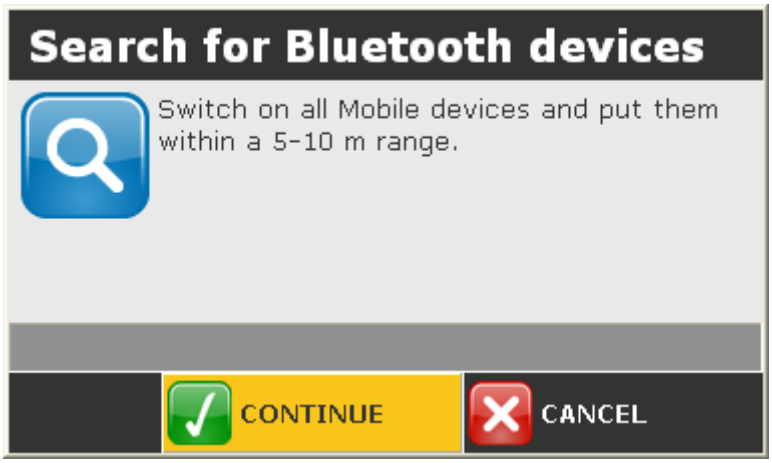


2. Click on .



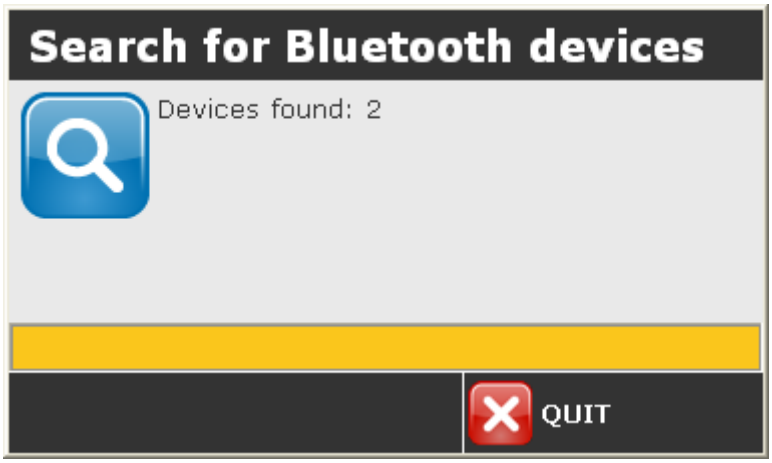
3. Follow the instructions on your screen.

4. Click on  .

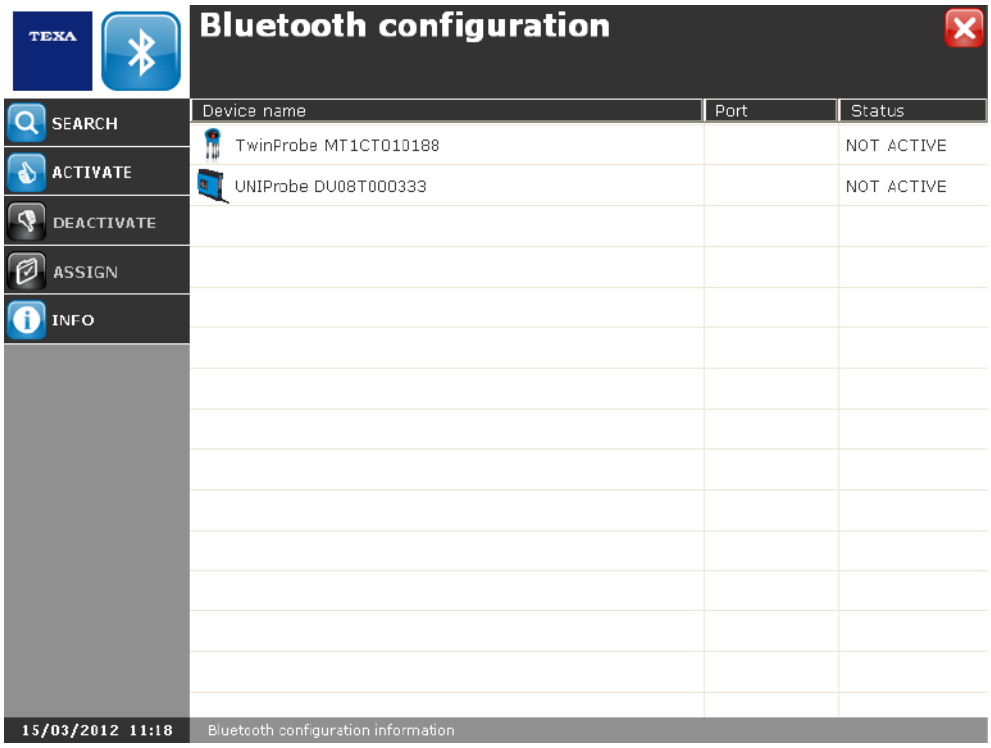


The function that searches for Bluetooth devices is launched.
Wait for the search to end.

5. Click on  .

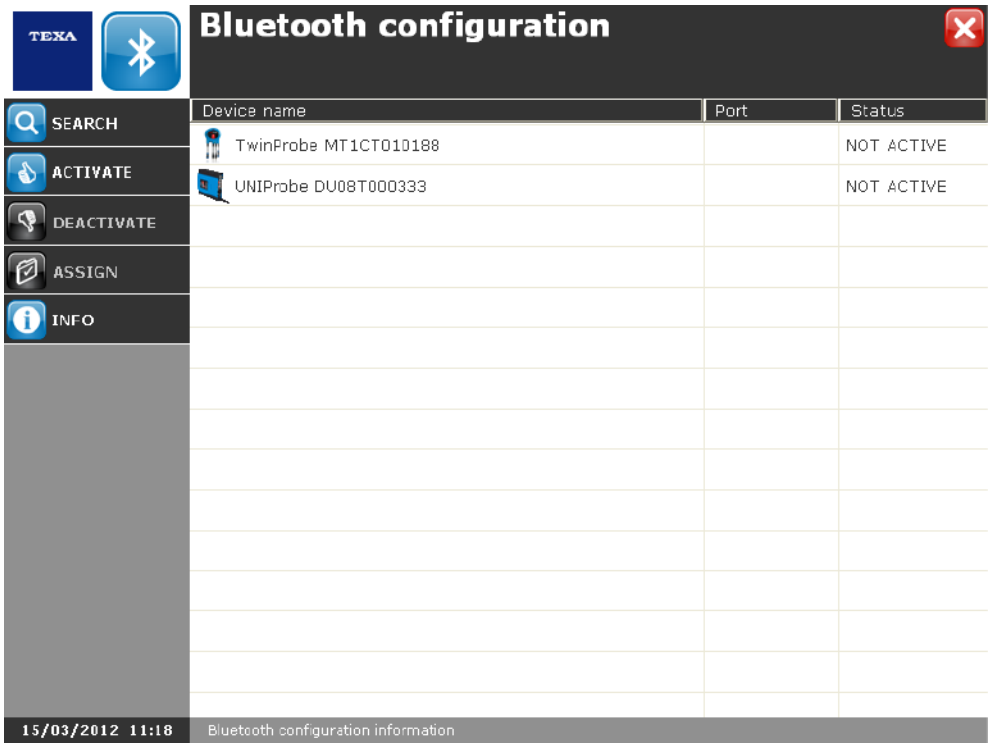


The result of the search is displayed.

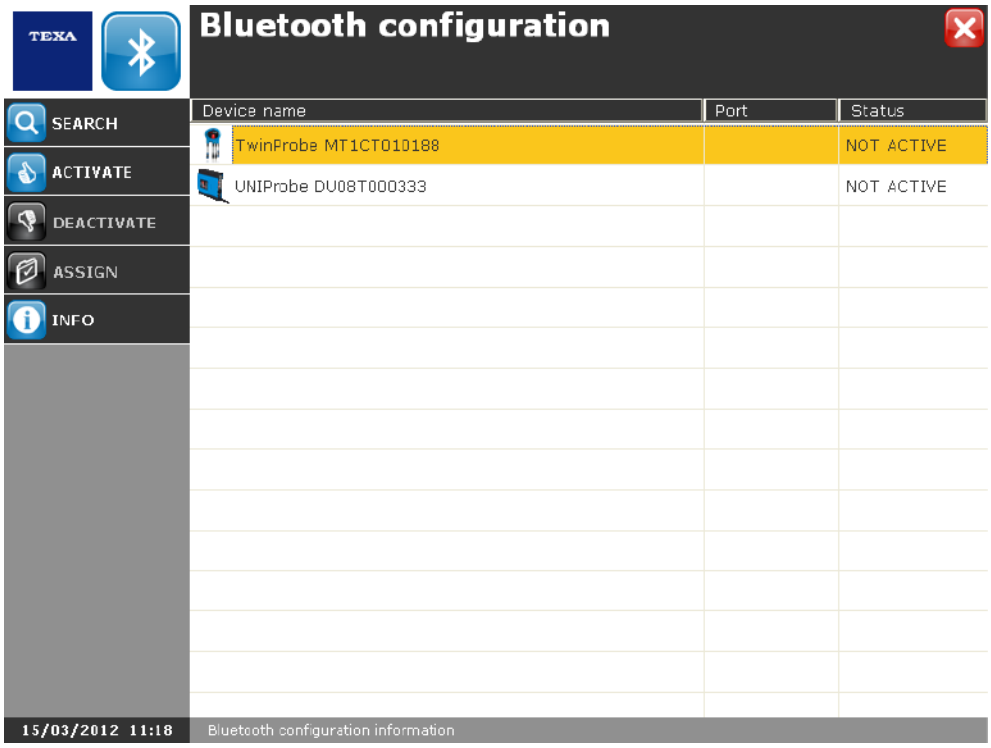


9.2 Activate

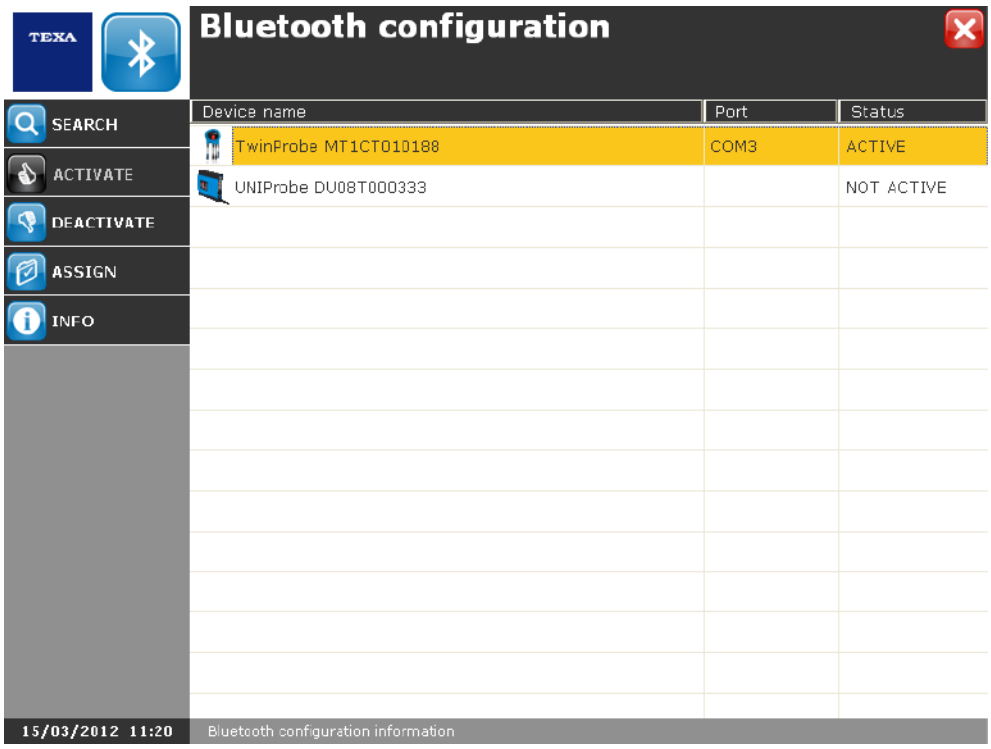
This function allows you to enable the communication with the selected device.
This function allows you to assign a COM to the device.
Proceed as follows:
1. Select the desired device.



2. Click on  .



The device is activated.

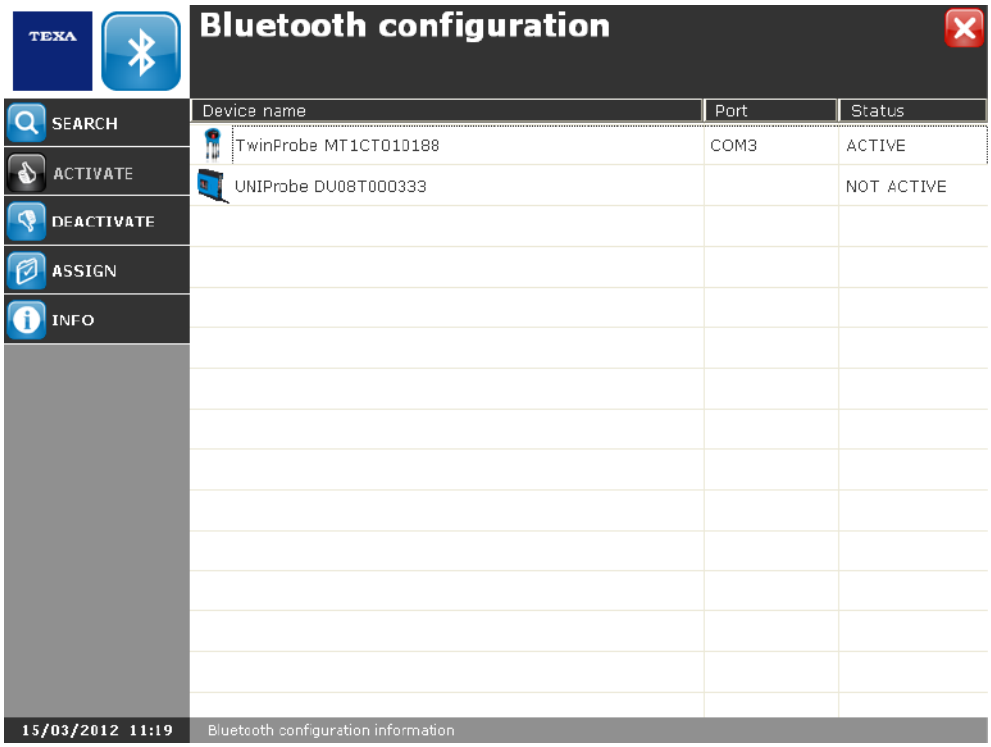


9.3 Deactivate

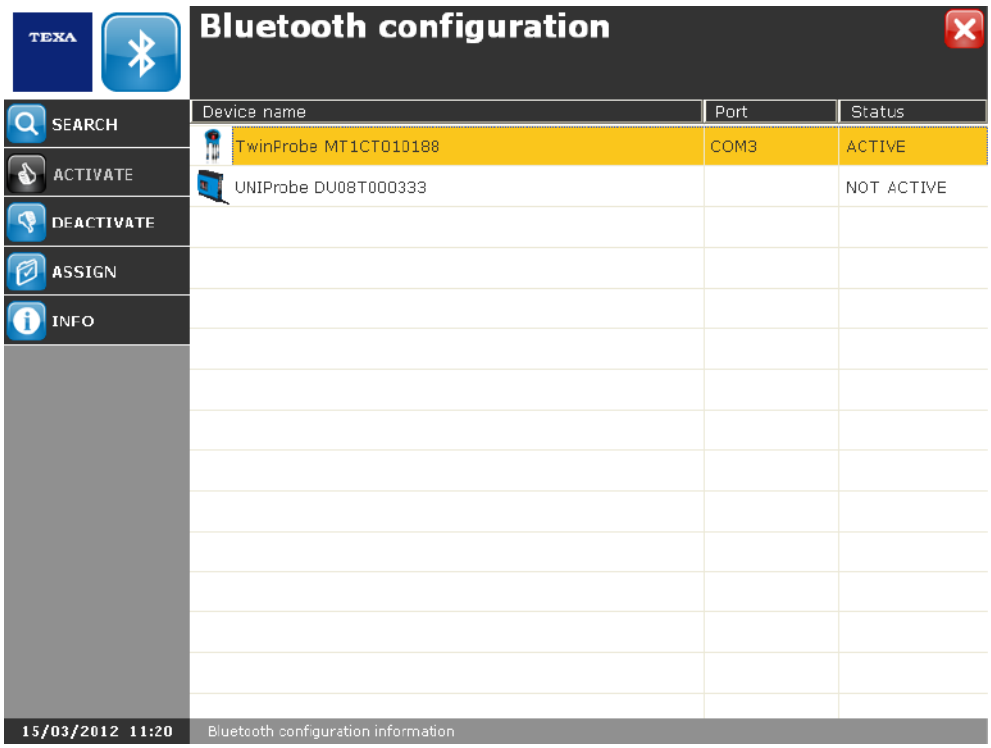
This function allows you to disable the communication with the selected device.

Proceed as follows:

1. Select the desired device.

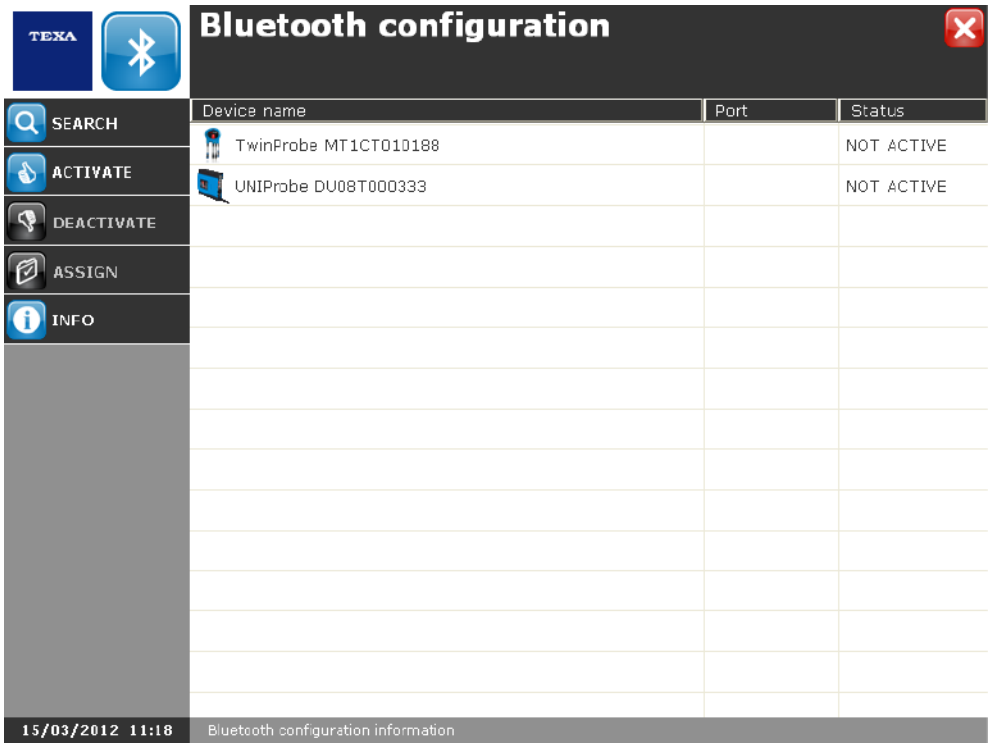


2. Click on  .



The device is deactivated.

The COM assigned to the device is removed.

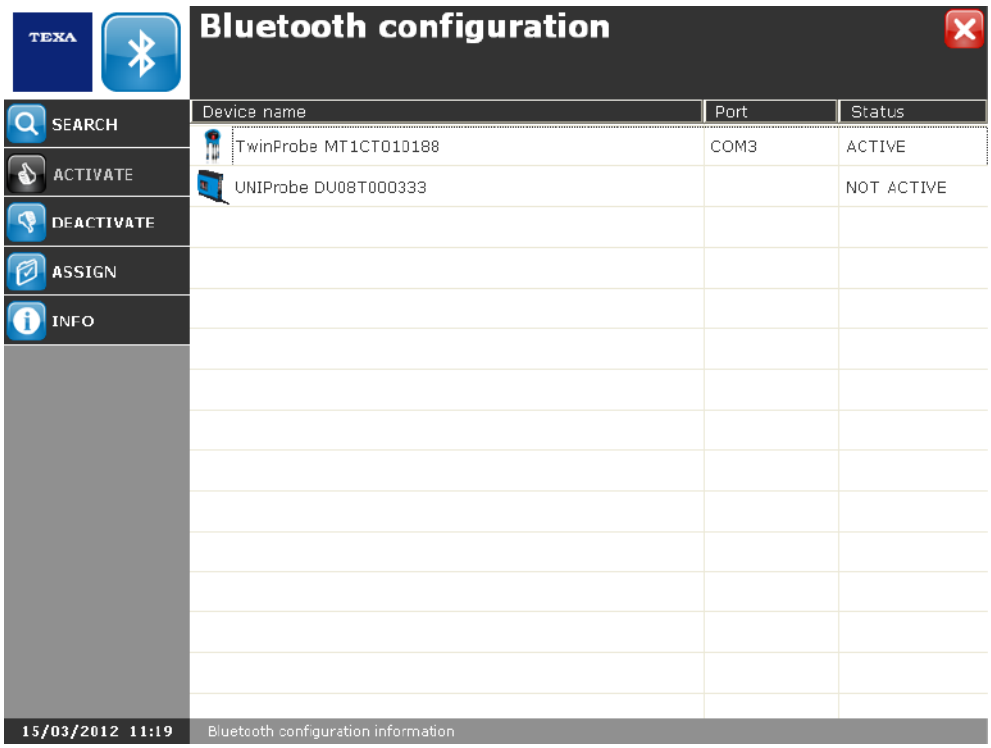


9.4 Assign

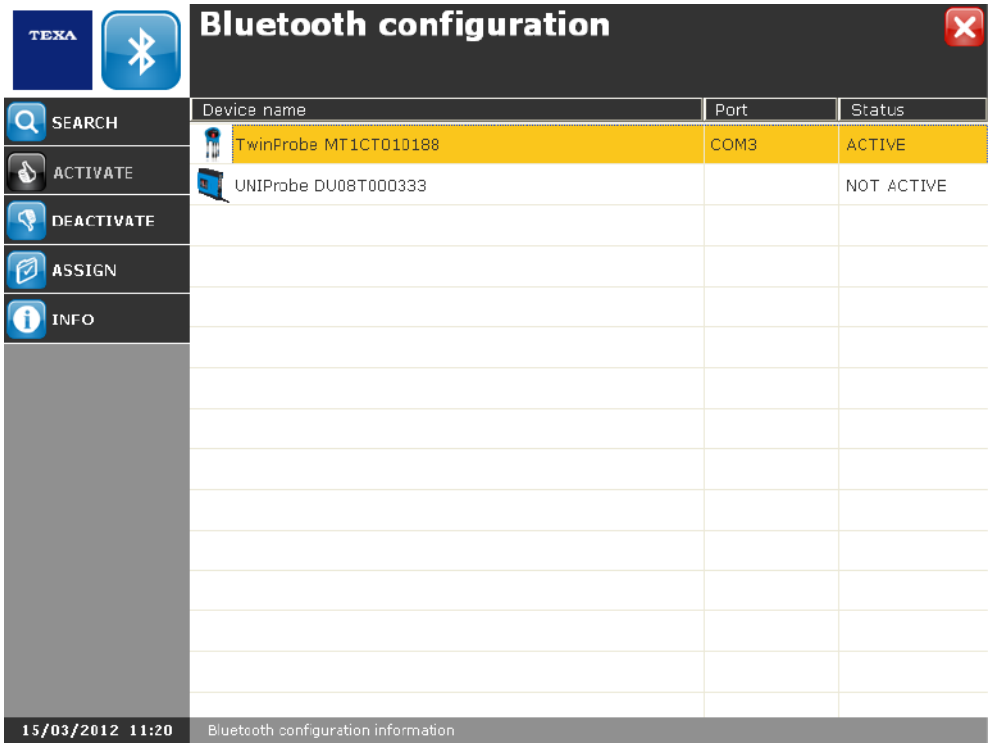
This function allows you to assign the selected device to a specific function (oscilloscope, analogical measurements, etc.).

Proceed as follows:

1. Select the desired device.

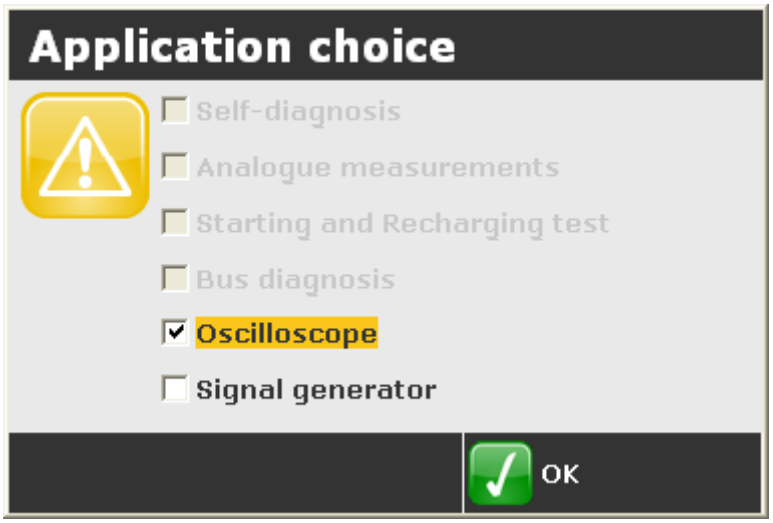


2. Click on  .

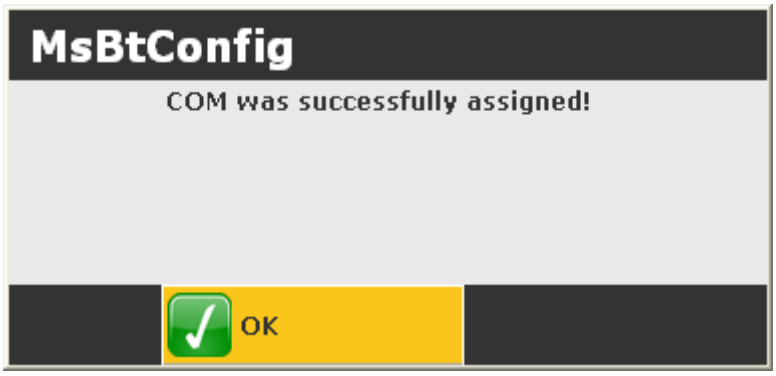


3. Select the desired function.

4. Click on 



5. Click on .

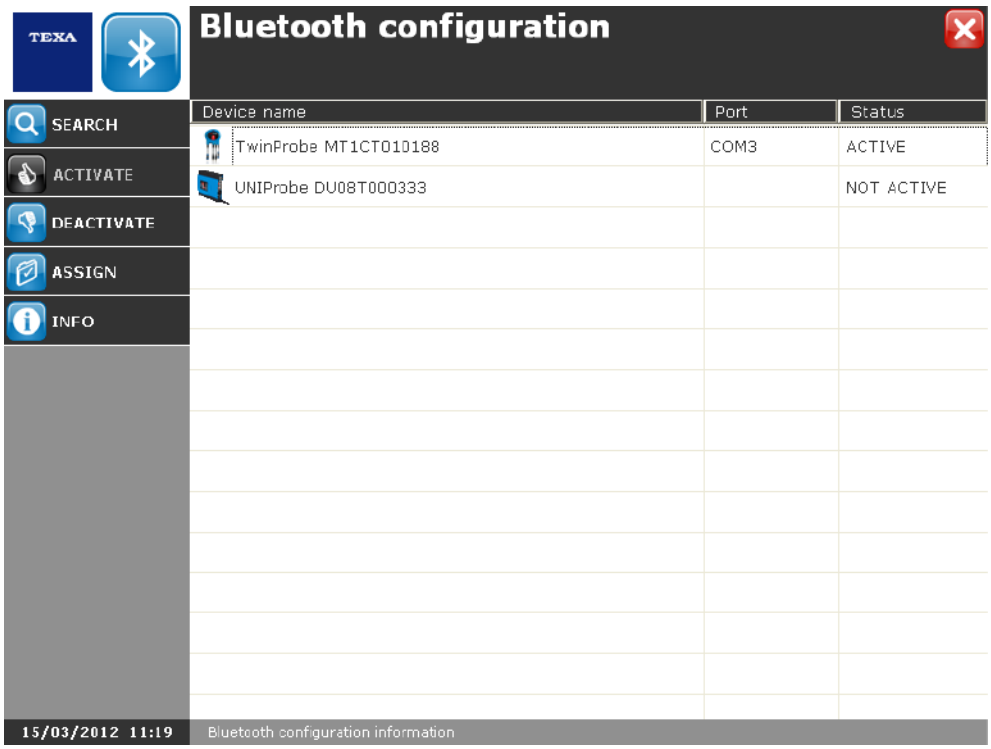


Repeat the operations described above for each of the functions that use the selected device.

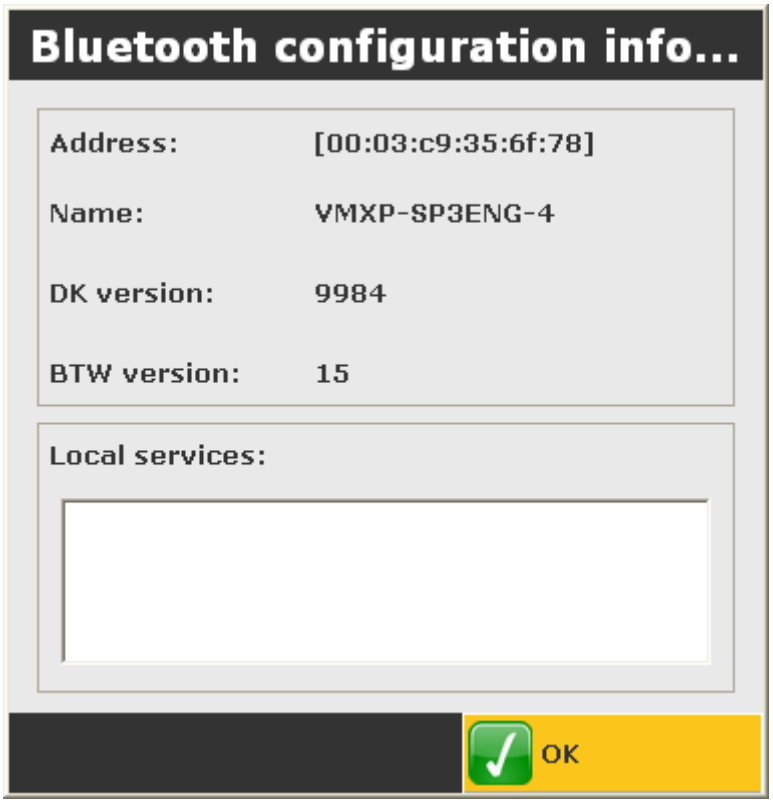
9.5 Info

Allows you to view information regarding the Bluetooth stack.
Proceed as follows:

1. Click on .

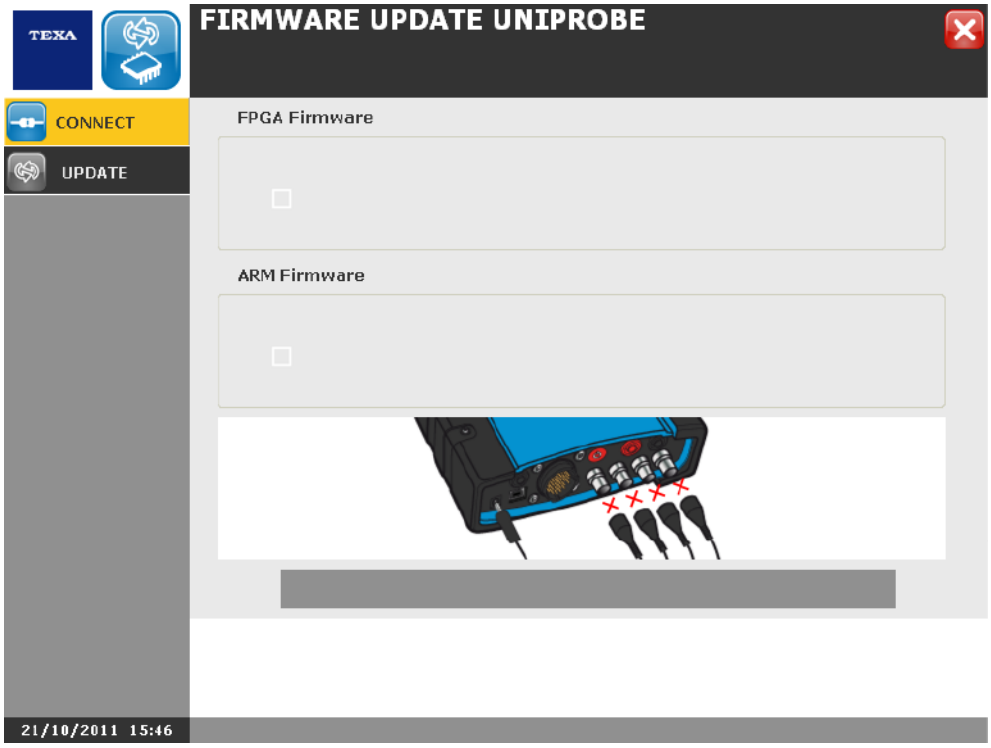


2. Click on .



10 UPDATE TOOL

This function allows updating the tools firmware.
Following the update procedure of UNIPROBE firmware.
This procedure is valid also for the update of TWINPROBE.



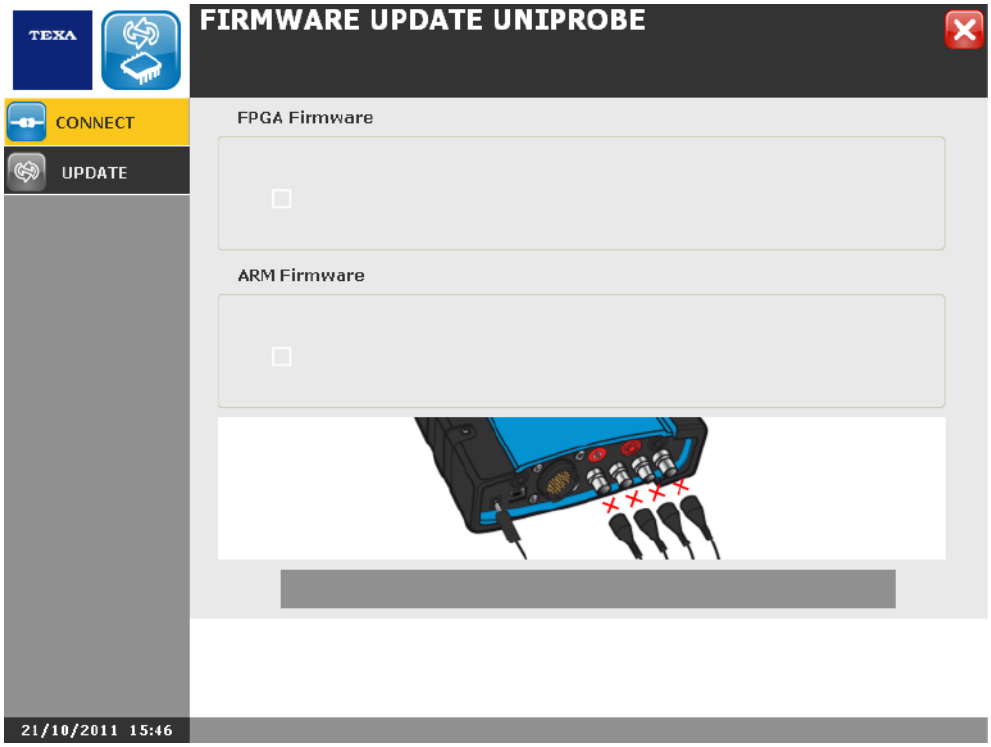
Icon	Name	Description	Notes
	Connect	Allows to connect the software to the tool.	--
	Update	Allows launching the firmware update.	--

10.1 Start Update

This function allows to start the firmware update.

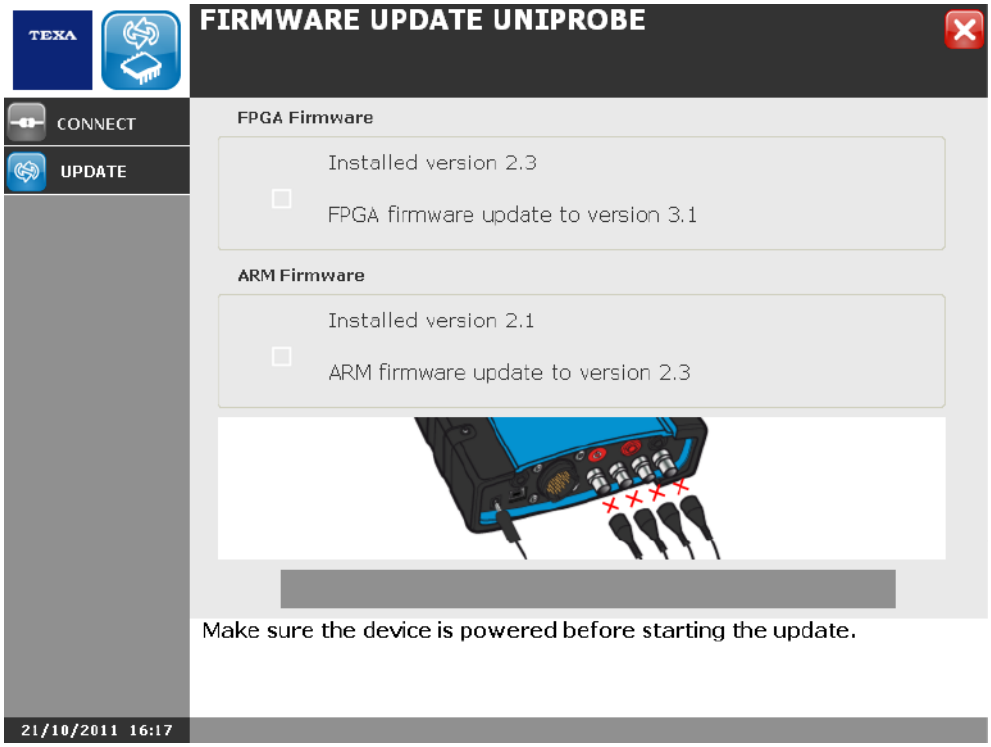
Proceed as follows:

1. Click on  .

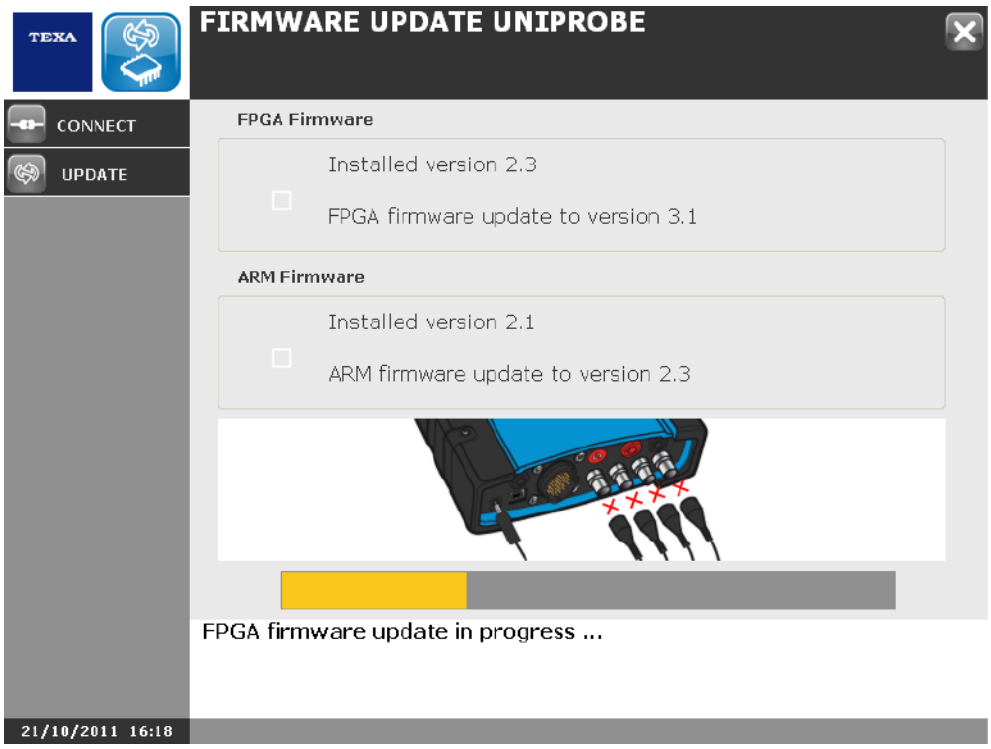


2. Follow the instructions on the screen.

3. Click on  .

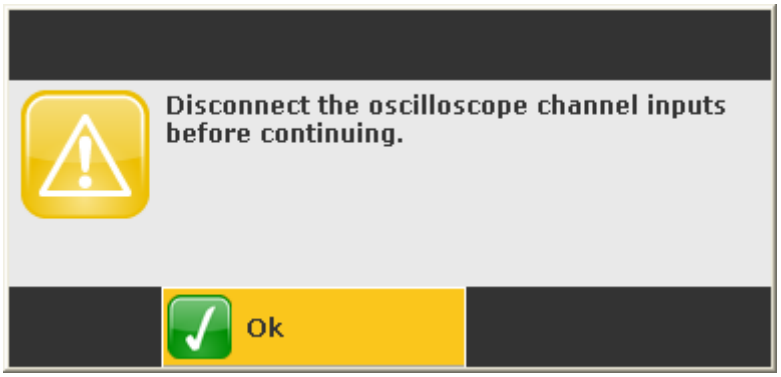


Wait for FPGA firmware installation.

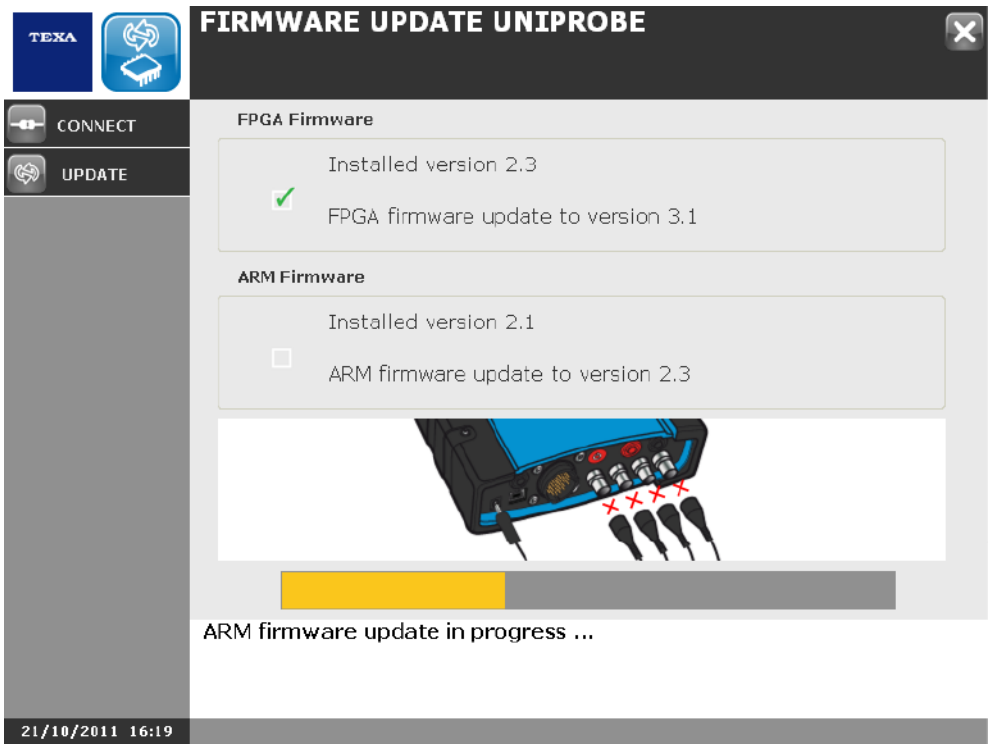


4. Follow the instructions that appear on your screen.

5. Click on  .

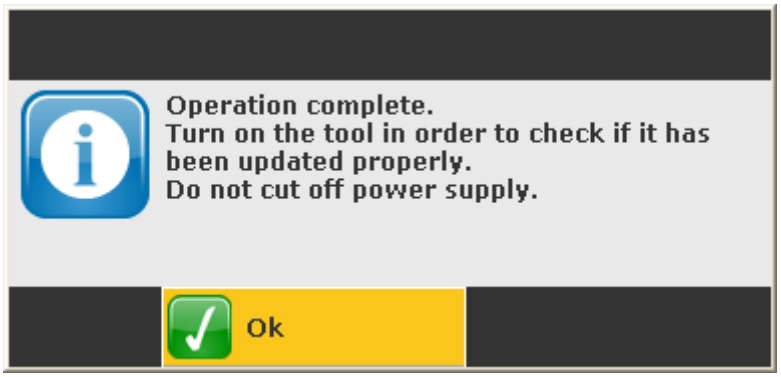


Wait for ARM firmware installation.



6. Follow the instructions that appear on your screen.

7. Click on  .



Firmware is updated.