

CA 15 Scope Meter Instruction Manual



Safety Guide:

- Ⓞ This unit is powered by battery (18650 Li-ion Battery).
Please install the proper battery before powering up the device.
- Ⓞ Sensor cable is only designed for Scope Meter testing usage. DO NOT use the cable for other purpose.
- Ⓞ The Device is only designed for working temperature environment between 0 - 50 Celsius or 32 – 122 Fahrenheit.
- Ⓞ Please DO NOT expose this device to extreme moisture nor clean face plate by applying any liquid directly to the face plate. If any liquid permeates into the device, shut down the device immediately.
- Ⓞ If any dirt on the screen, please apply mild cleaner on soft cleaning cloth to clean.
- Ⓞ DO NOT hit or drop the device.
- Ⓞ DO NOT disassemble the device or remove the back panel of the device.
- Ⓞ Please follow the instructions stipulated within this manual for operating this device safely.

Product Specification

CA 15 Specifaciton

- Ⓞ Working Voltage: 3.6V
- Ⓞ Working Current: 600mA
- Ⓞ Working Tempurature: 0 - 50 Celsius
- Ⓞ Dimension: 33mm(H)*185mm(W)*285mm(L)
- Ⓞ Product Weight: 730g

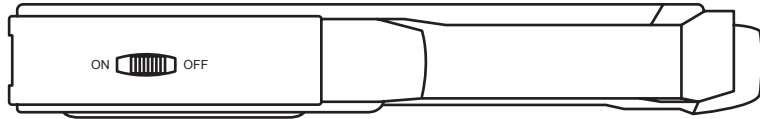
CA15 Functional specification

- Ⓞ Measuring Voltage: AC250V
DC220V

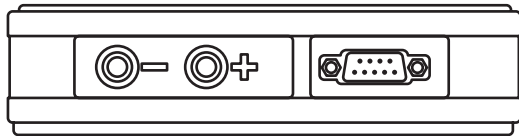
Operation

● Power On/Off

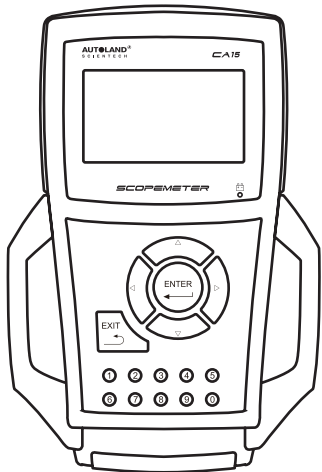
An On/Off switch on the left-top side of the device.



A set of positive/negative ports on the top of the device. Please plug the probes into the corresponding ports accordingly before measuring.



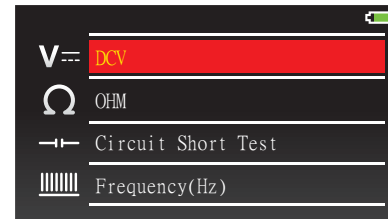
- ▲ ▼:UP and DOWN buttons are used for modify the volume of the Y-axis.
- ◀ ▶:RIGHT and LEFT buttons are used for modify the volume of the X-axis.
- ENTER: Use this button to select the currently highlighted option to be executed.
- EXIT: Use this button to leave the current page.
- Numbers:0~9



● Instruction of Multimeter

DCV

DCV measurement

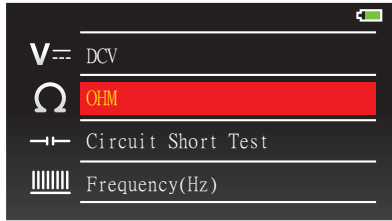


Entering DCV to measure.

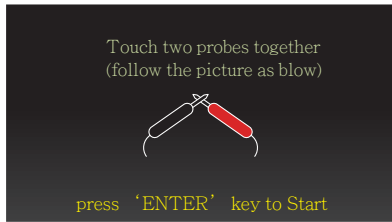
Max & Min represents a maximum and minimum voltage within a period of time. User can increase the length of time for measuring in the SETTINGS page.

OHM

OHM Measurement



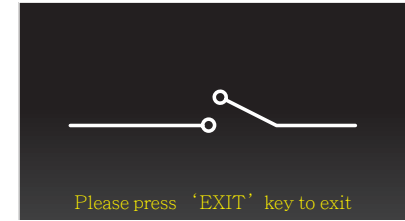
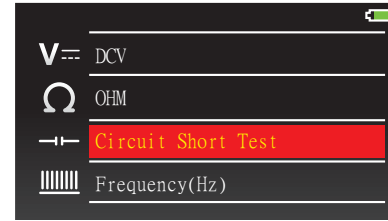
Connect positive and negative probe and then press ENTER to calibrate when entering OHM, then to measure resistance.



When measuring resistance, if the circuit short happens, the screen will show image of circuit short.

※ Attention: OHM is only for measuring resistance in Ohm. Please DO NOT attempt to measure any other type of value under this setting.

Circuit Short Test

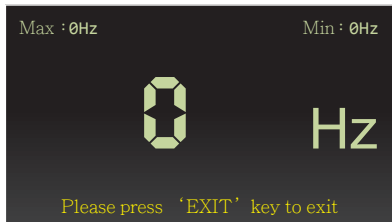
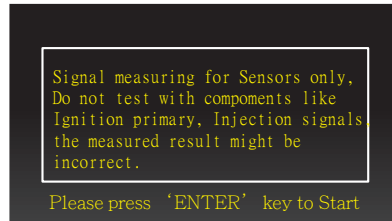
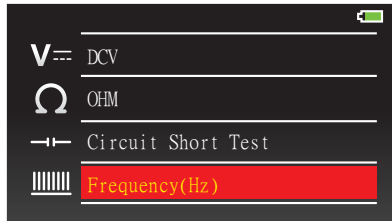


When entering Circuit Short Test the screen will display the circuit short image. By selecting the above option the user will enter the Circuit Short Test.



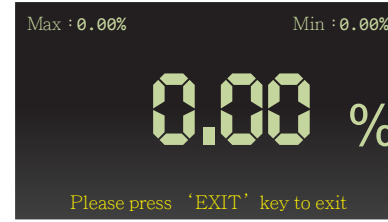
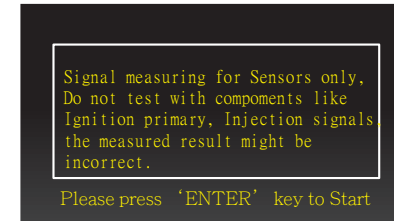
Circuit Short Test: When the circuit is connected, the image will change to a complete loop and the device will make "beeping" sounds.

Frequency(Hz) Frequency Measurement



Enter Frequency (Hz) and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to measure frequency.

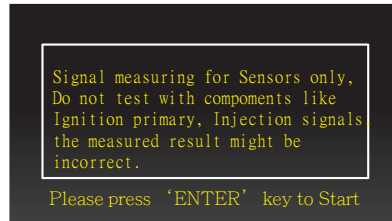
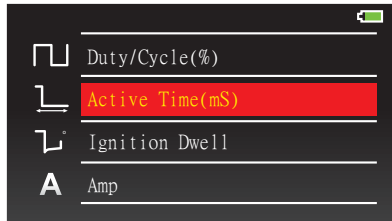
Duty/Cycle (%) Duty/Cycle Percentage Measurement



Enter Duty/Cycle (%) and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to measure the percentage.

Active Time (mS)

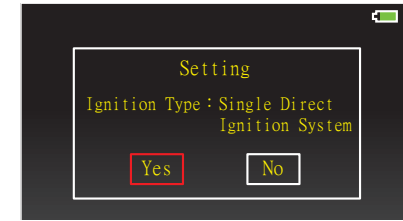
Activation Time Measurement



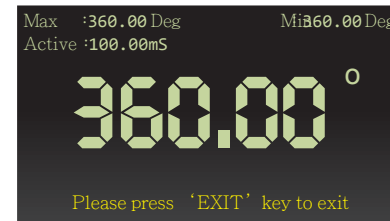
Enter Activation Time and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement.

Ignition Dwell

Ignition Dwell Measurement



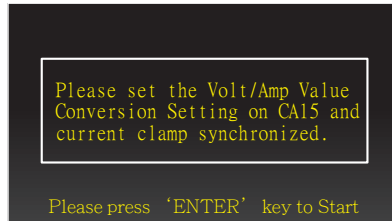
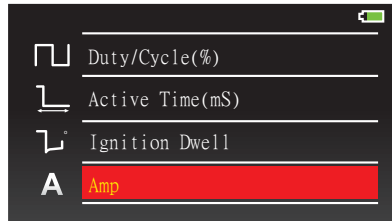
Confirm ignition type and quantity of cylinder when entering to measure ignition dwell. Enter proper setting if the original setting is different from the testing vehicle.



Enter Ignition Dwell and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement.

Amp.

Measuring the magnitude of current.

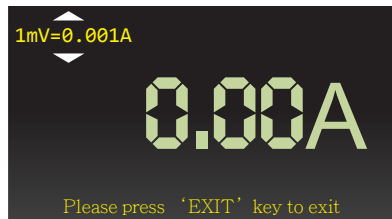


Please connect AC/DC Current clamp (OPTIONAL)

There are 1mV/100mA and 1mV/10mA conditions on Current clamp meter.

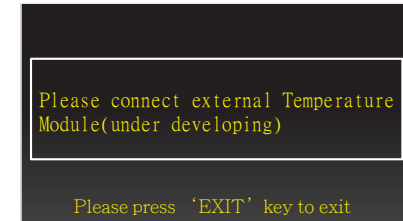
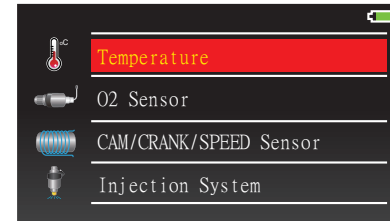


Please select proper condition for the Current clamp measurement, for example in order to measure 1mV=0.01A with CA15, move the switch to the 1mV/10mA on Current clamp.



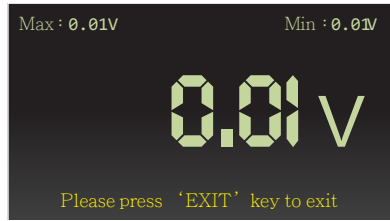
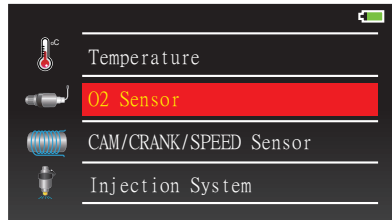
In order to measure the Current accurately press the ZERO button on the current before performing the measurement.

Temperature



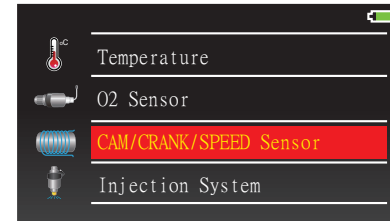
Temperature Module is under development.

O2 Sensor



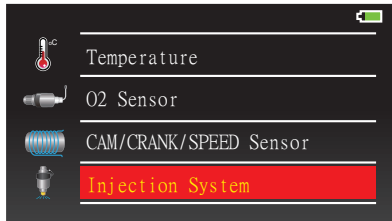
Enter O2 Sensor and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to measure O2 Sensor Voltage.

CAM/CRANK/SPEED Sensor

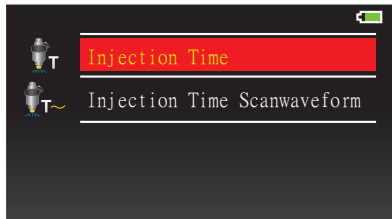


Enter CAM/CRANK/SPEED Sensor and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement.

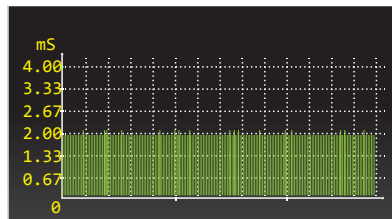
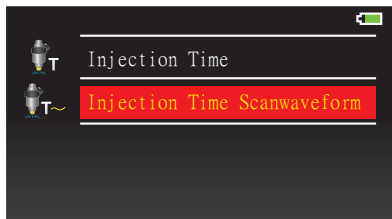
Injection System



Enter Injection System to select display mode: Injection Time (number).



Enter Injection System to select display mode: Injection Time Scanwaveform (waveform).

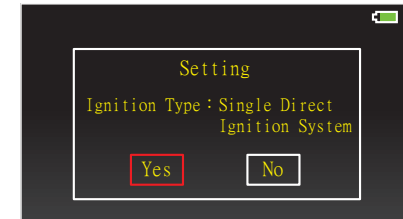
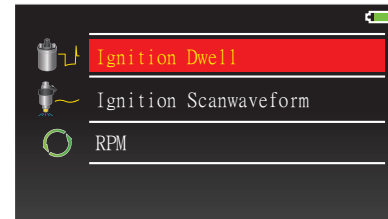


Enter Injection System and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement.

Ignition System



Enter Ignition System to select display mode: Ignition Dwell.



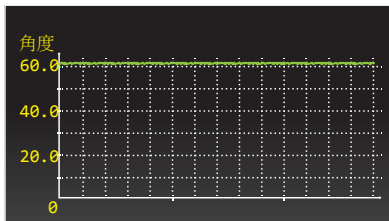
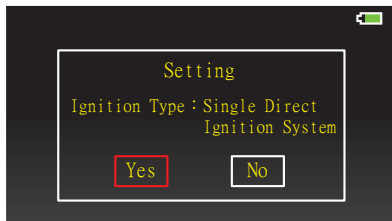
Confirm ignition type and number of cylinders when entering to measure ignition dwell.



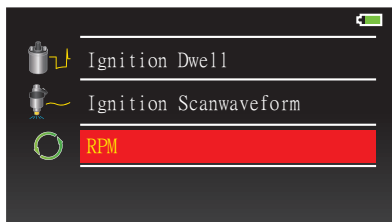
Enter Ignition System to select display mode: Ignition Scanwaveform.



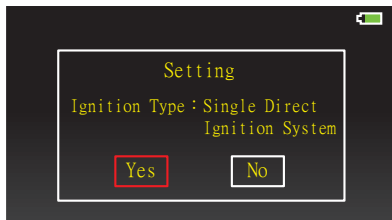
Confirm Ignition type and number of cylinders when entering to measure Ignition Dwell Angle.



Enter Ignition System to measure RPM.



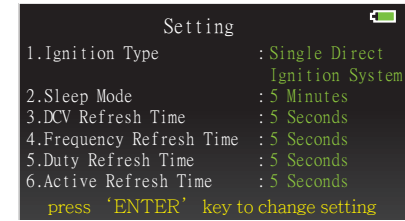
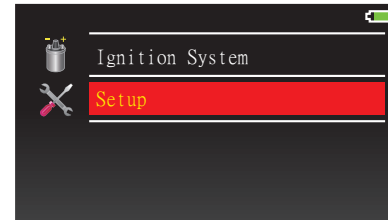
Confirm Ignition type and number of cylinders when entering to measure RPM.



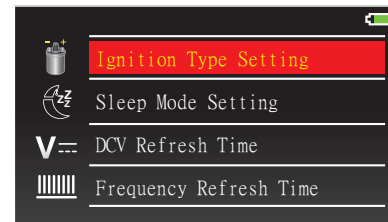
Enter RPM and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement.

Setup

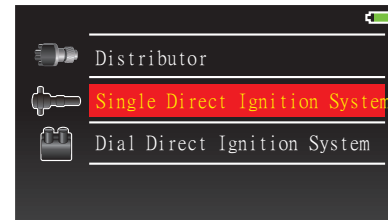
Enter Setup to view and modify current settings.



Ignition Type Setting

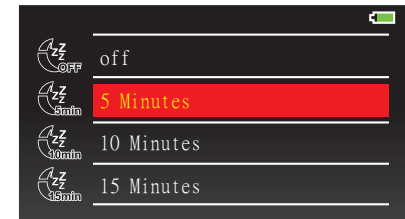
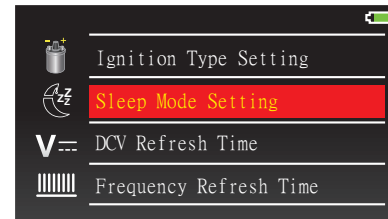


Select Ignition type: Single Direct Ignition System

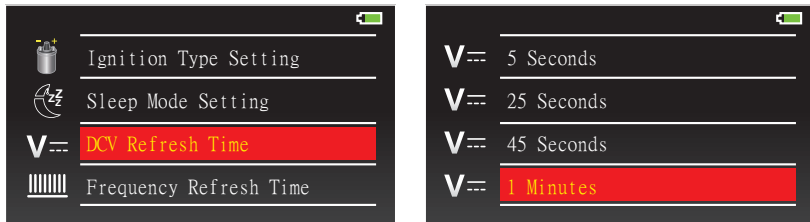


Sleep Mode Setting

Use this option to automatically power off the unit in order to make your battery charge to last.



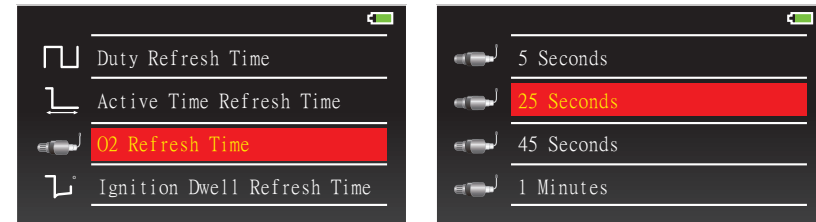
DCV Refresh Time



Ignition Type Setting
Sleep Mode Setting
DCV Refresh Time
Frequency Refresh Time

5 Seconds
25 Seconds
45 Seconds
1 Minutes

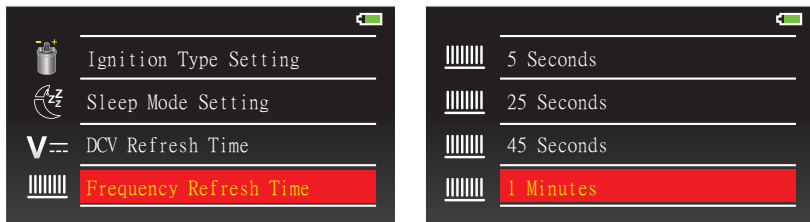
O2 Refresh Time



Duty Refresh Time
Active Time Refresh Time
O2 Refresh Time
Ignition Dwell Refresh Time

5 Seconds
25 Seconds
45 Seconds
1 Minutes

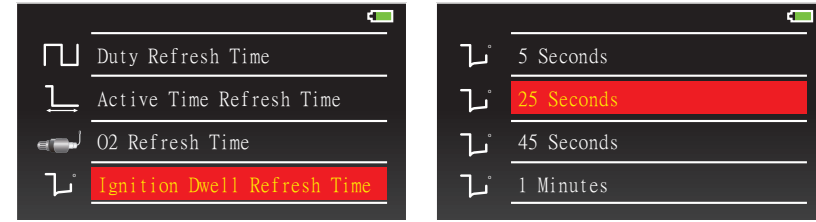
Frequency Refresh Time



Ignition Type Setting
Sleep Mode Setting
DCV Refresh Time
Frequency Refresh Time

5 Seconds
25 Seconds
45 Seconds
1 Minutes

Ignition Dwell Refresh Time



Duty Refresh Time
Active Time Refresh Time
O2 Refresh Time
Ignition Dwell Refresh Time

5 Seconds
25 Seconds
45 Seconds
1 Minutes


Duty Refresh Time



Duty Refresh Time
Active Time Refresh Time
O2 Refresh Time
Ignition Dwell Refresh Time

5 Seconds
25 Seconds
45 Seconds
1 Minutes

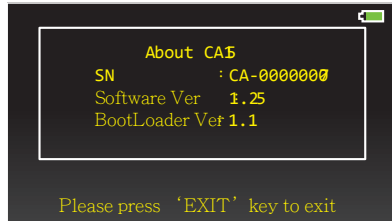
Active Time Refresh Time



Duty Refresh Time
Active Time Refresh Time
O2 Refresh Time
Ignition Dwell Refresh Time

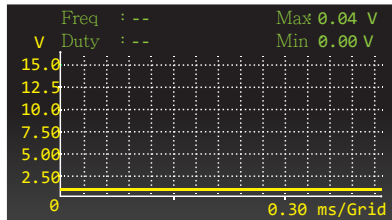
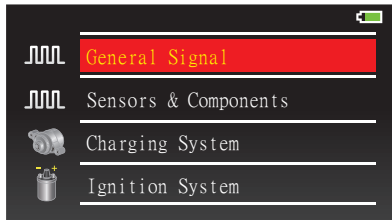
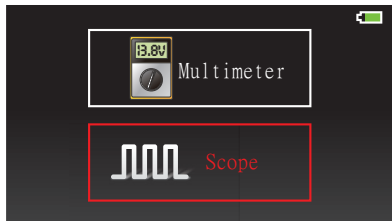
5 Seconds
25 Seconds
45 Seconds
1 Minutes

Software Information

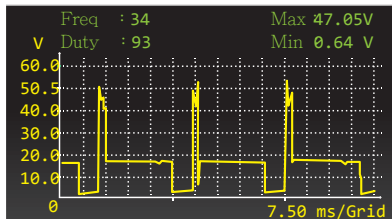


● Instruction of Scope

General Signal

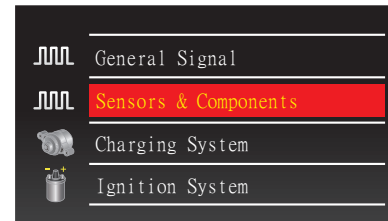


Press ▲▼ to modify the range of Voltage measurement
 Press ◀▶ to modify the range of Time measurement

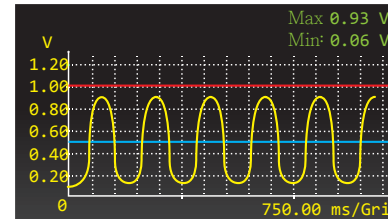
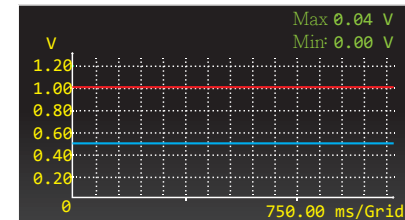
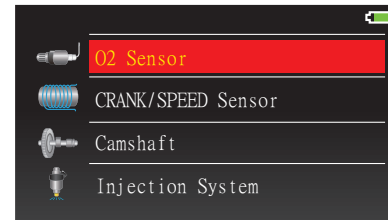


Connect positive (Red) and negative (Black) probe to measure.

Sensors & Components

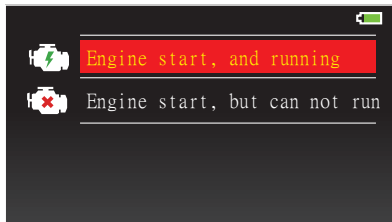
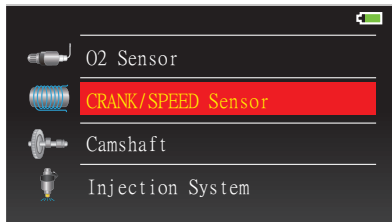


O2 Sensor

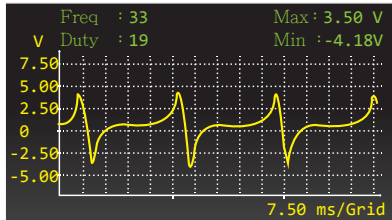
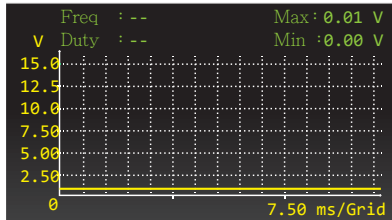


Enter O2 Sensor and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement.

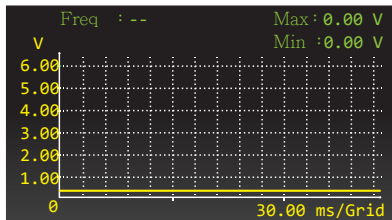
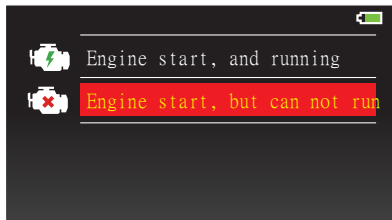
CRANK/SPEED Sensor



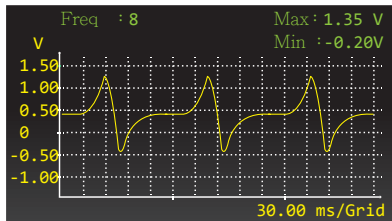
Select Engine start, and running



Enter CRANK/SPEED Sensor and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement.

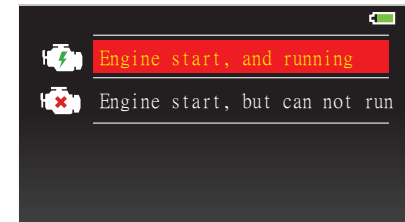
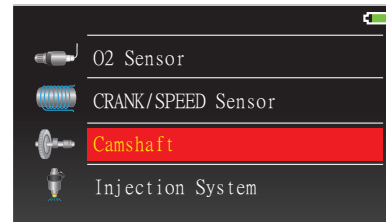


Select Engine start, but cannot run.

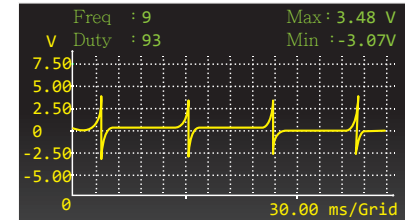
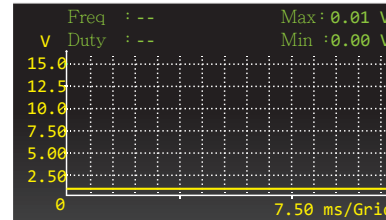


Enter CRANK/SPEED Sensor and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement.

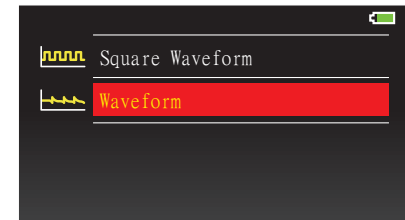
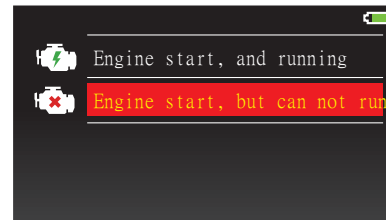
Camshaft



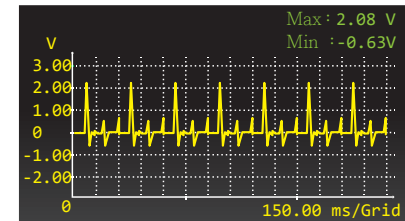
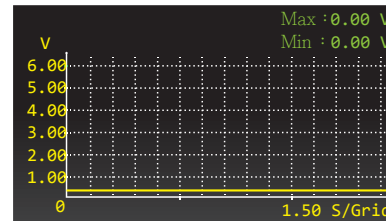
Select Engine start, and running.



Enter Camshaft and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement.

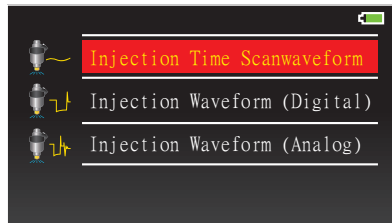
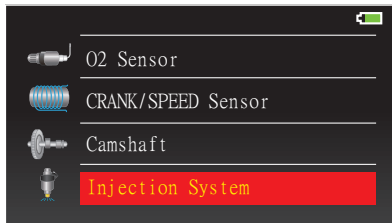


Please select Engine start, but cannot run and Square Waveform or Waveform

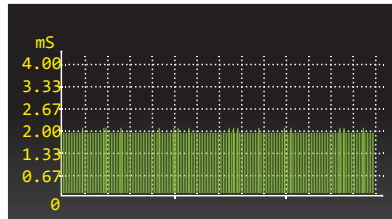
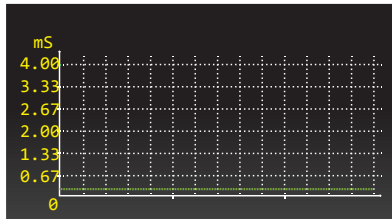


Enter Camshaft and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement.

Injection System

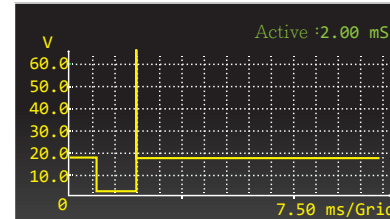
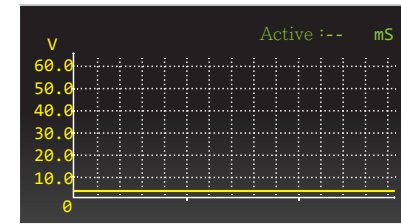
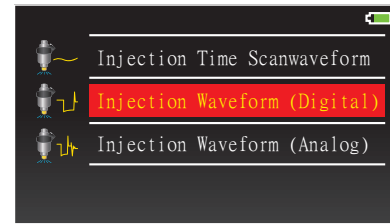


Please select Injection Waveform mode: Injection Time Scanwaveform, Injection Waveform (Digital), or Injection Waveform (Analog)



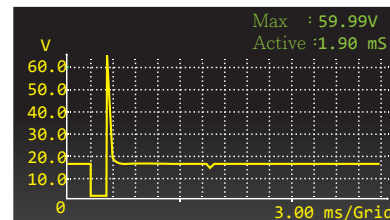
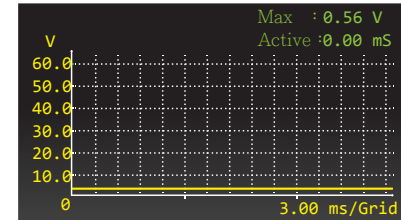
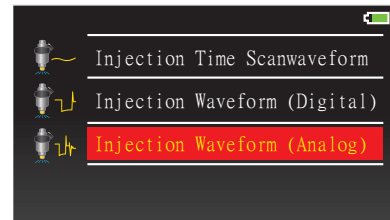
Enter Injection Time Scanwaveform and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement.

Injection Waveform (Digital)



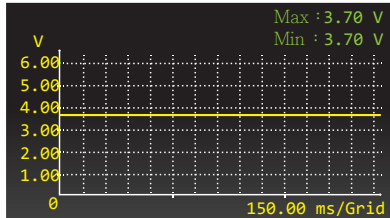
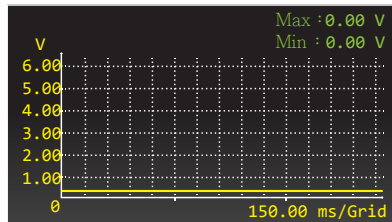
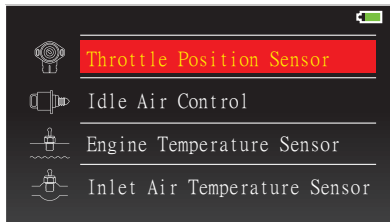
Enter Injection Waveform (Digital) and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement.

Injection Waveform (Analog)



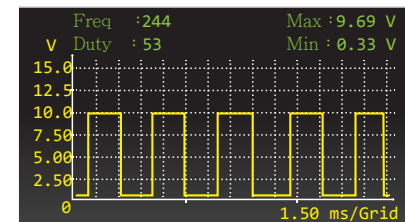
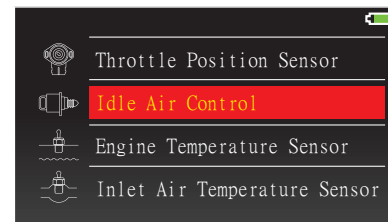
Enter Injection Waveform (Analog) and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement.

Throttle Position Sensor



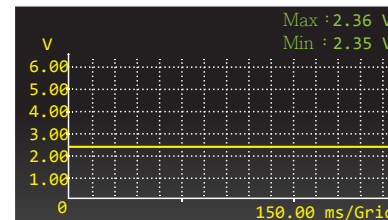
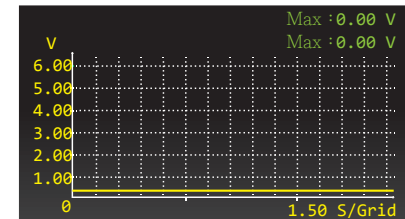
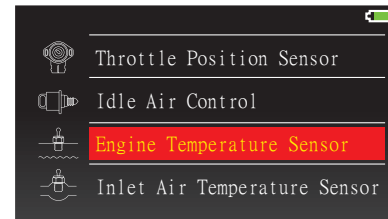
Enter Throttle Position Sensor and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement.

Idle Air Control



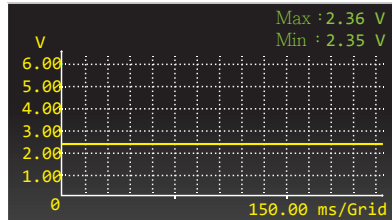
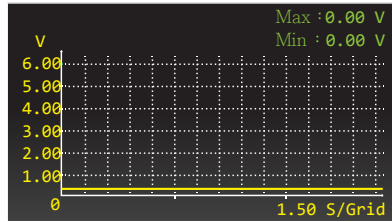
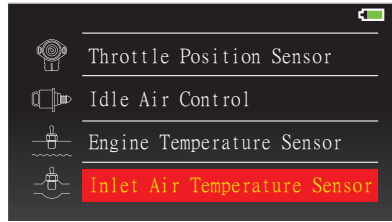
Enter Idle Air Control and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement.

Engine Temperature Sensor



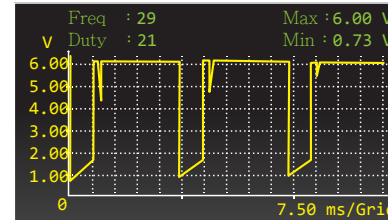
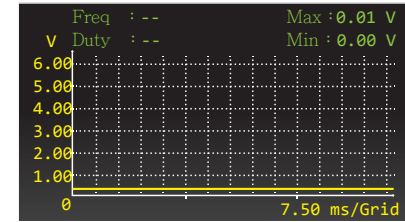
Enter Engine Temperature Sensor and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement.

Inlet Air Temperature Sensor



Enter Inlet Air Temperature Sensor and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement.

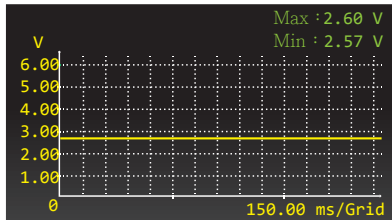
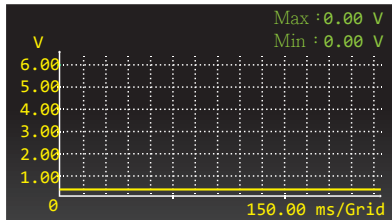
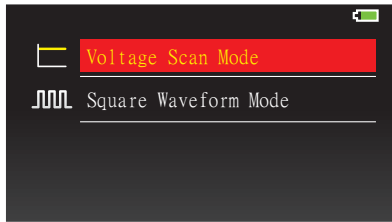
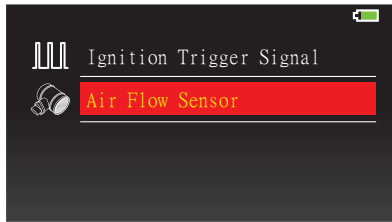
Ignition Trigger Signal



Enter Idle Ignition Trigger Signal and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement.

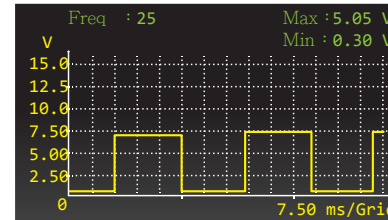
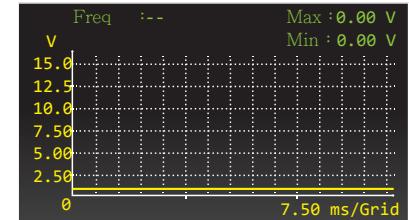
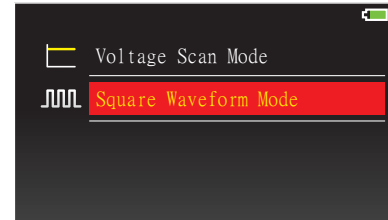
Air Flow Sensor

Voltage Scan Mode



Enter Air Flow Sensor and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement. Analog air flow sensor is same as Voltage air flow sensor. Such as: Toyota Surf, Toyota Vios.

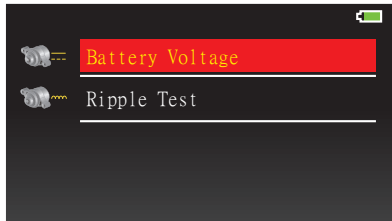
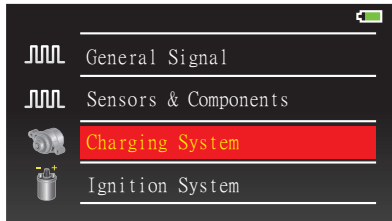
Square Waveform Mode



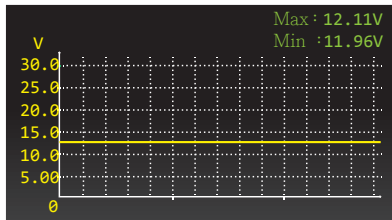
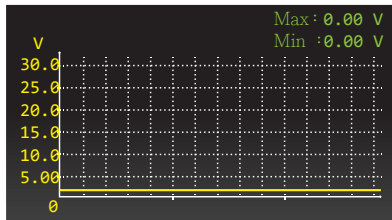
Digital air flow sensor is same as Frequency air flow sensor. Such as: Mitsubishi Galant.

Charging System

Enter Charging System to select Battery Voltage or Ripple Test.

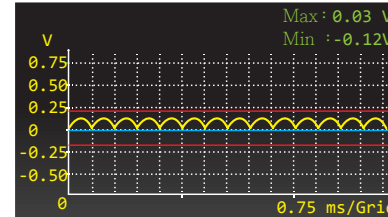
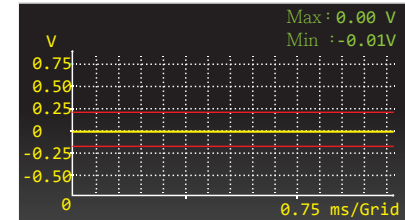
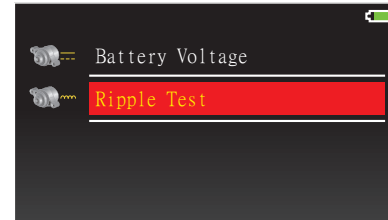


Battery Voltage



Enter Battery Voltage and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement.

Ripple Test

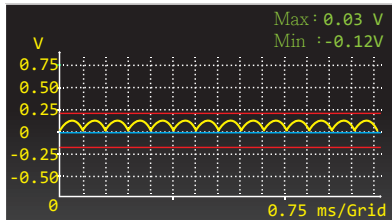
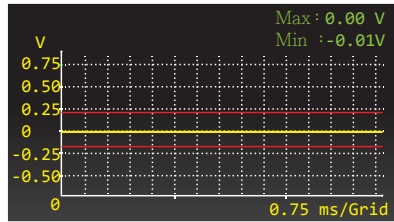
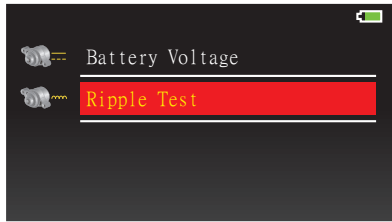


Enter Ripple Test and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement.

※ Attention: Ripple Test is only for measuring Ripple Test. Please DO NOT attempt to measure any other type of value under this setting.

Ignition System

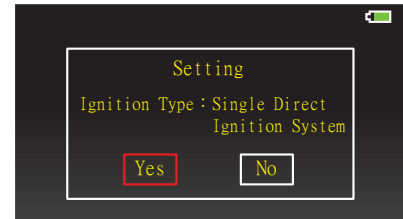
Enter Ignition System to select Ignition Primary or Ignition Secondary



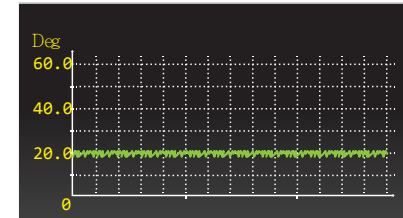
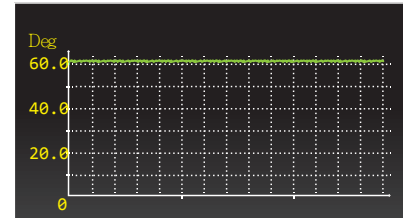
Ignition Primary



Enter Ignition Primary to select Dwell Scanwaveform or Ignition Coil Primary Waveform.

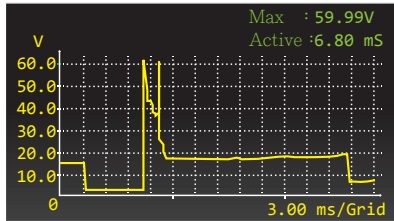
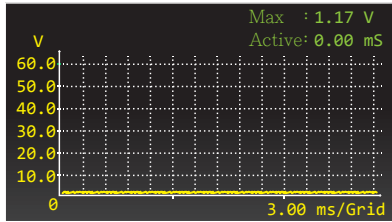
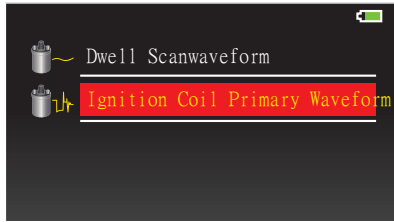


Confirm ignition type and number of cylinders.



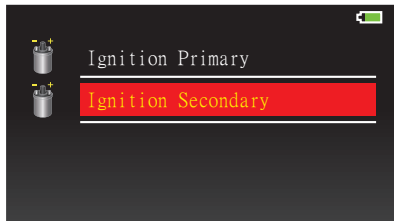
Enter Dwell Scanwaveform and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement.

Ignition Coil Primary



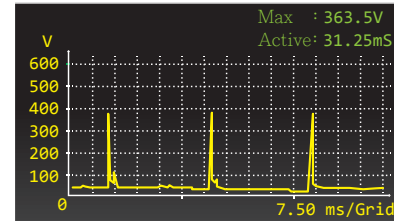
Enter Ignition Coil Primary and connect positive probe (Red) with sensor and the negative probe (Black) with chassis ground of the vehicle in order to perform measurement. Max. Voltage is out of range, press ▲▼ to modify the range of Voltage measurement.

Ignition Secondary

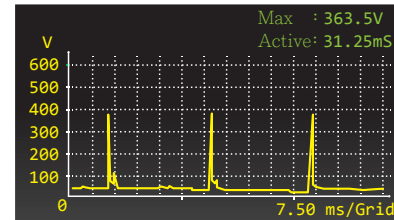


Please connect IG-M1 for measuring Ignition Secondary.

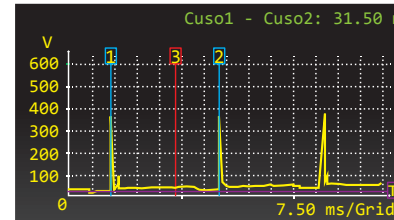
Additional function of waveform



When measuring waveform, press ENTER for freeze-frame current waveform.



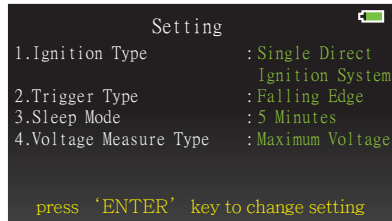
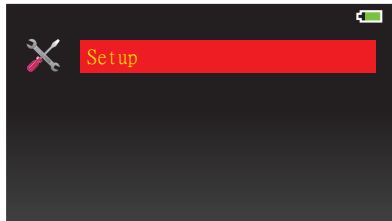
Press number 1,2,3 to modify the range of Time measurement (Y-axis).



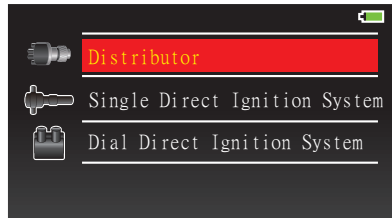
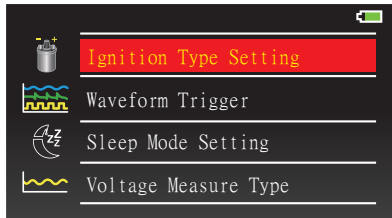
After setup, check Time from this waveform to next waveform.

Setup

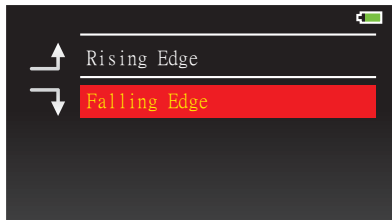
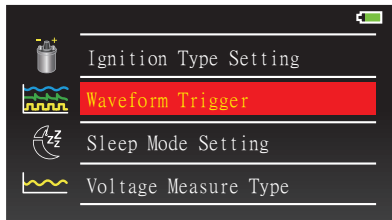
Enter Setup to view and modify current settings.



Ignition Type Setting

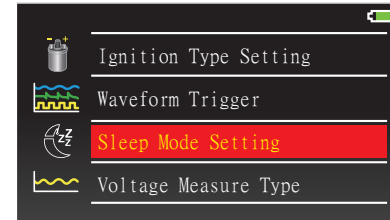


Select Ignition type: Single Direct Ignition System

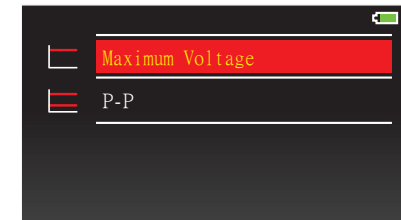
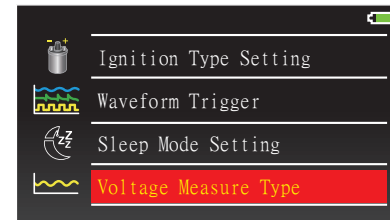


Select Waveform Trigger: Rising Edge or Falling Edge

Sleep Mode Setting

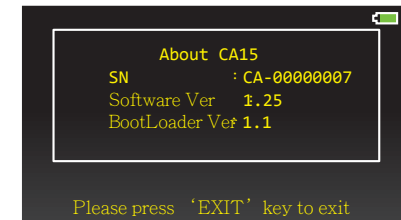
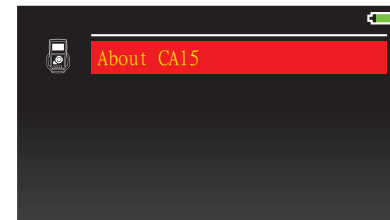


Select time for Sleep Mode



Select Voltage Measure Type: Maximum Voltage or P-P (Peak to Peak)

Software Information



CA-15 Software update

Step 1: Download and Install driver

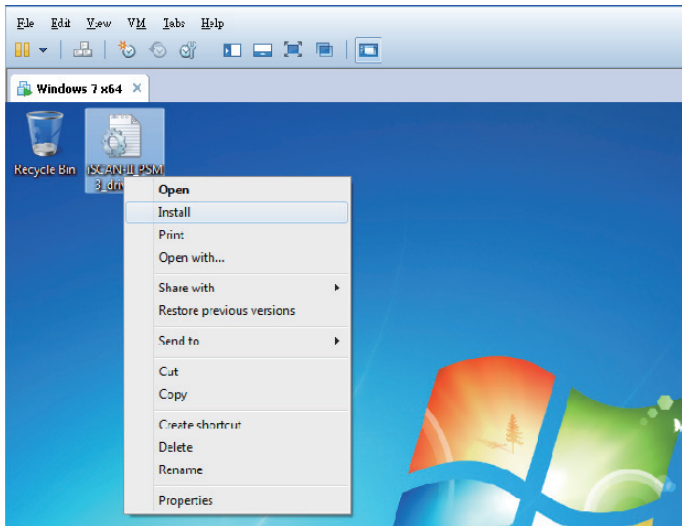
(1) Please login to our member and download driver from website www.autolandscientech.com PSM3_driver_v4.inf (iSCAN-II / VeDiS-II / PSM3 USB Driver)
(You must have registered to become our member to be able to access the member area)

NOTE

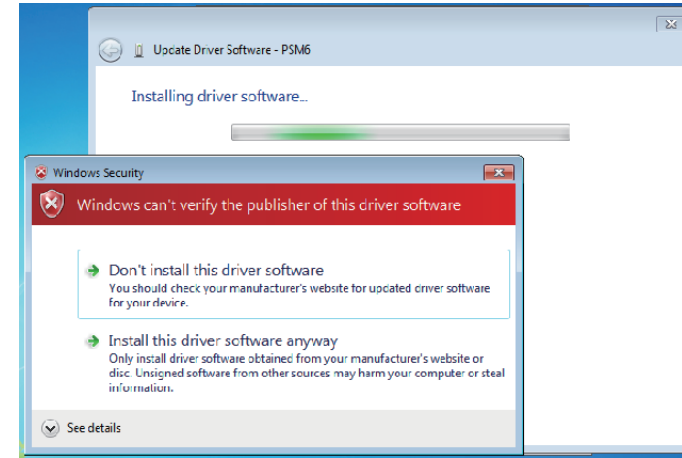
The driver is same as driver for iScan-IIwt / VeDiS-II. If you have already downloaded this software please disregard and skip to step 2.



(2) Please right click to install driver.



(3) Please select "Install this driver software anyway".

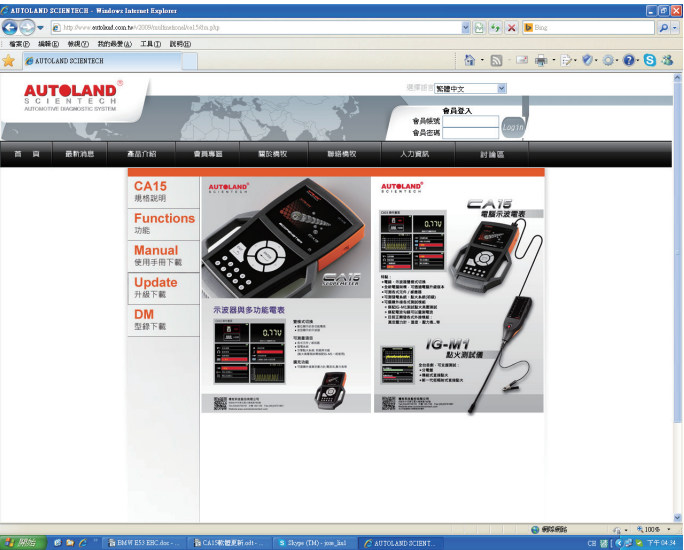


Step 2: Update CA15 Software

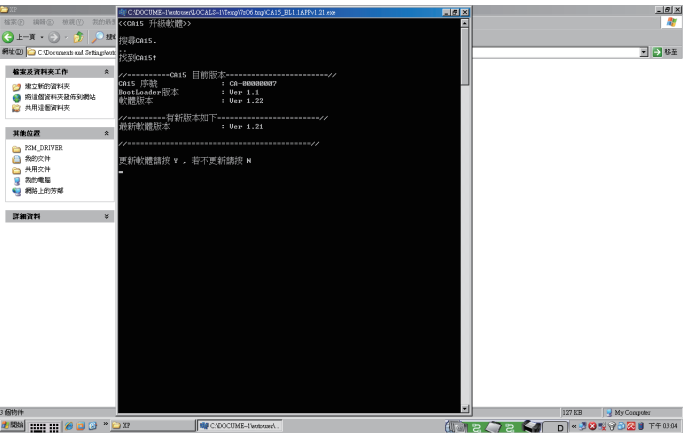
(1) Please use USB cable (PS-C) to connect CA15 base unit to PC/NB, and power on CA15 (please make sure the battery has been inserted into CA15 base unit). The power indicator of CA15 base unit will be light on, but screen display will not be light on.



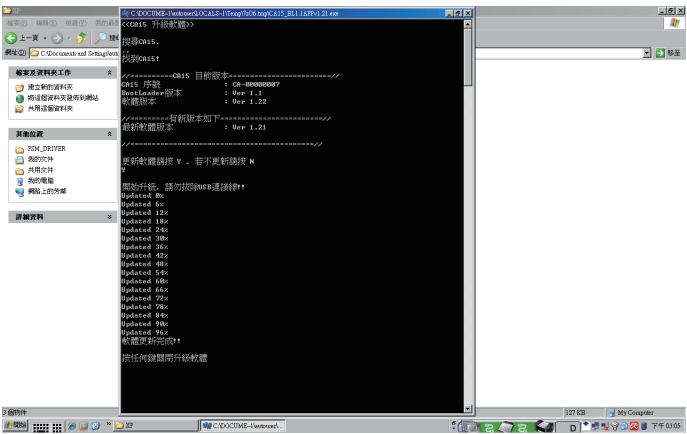
(2) Please download latest CA15 software by clicking Update
www.autolandscientech.com



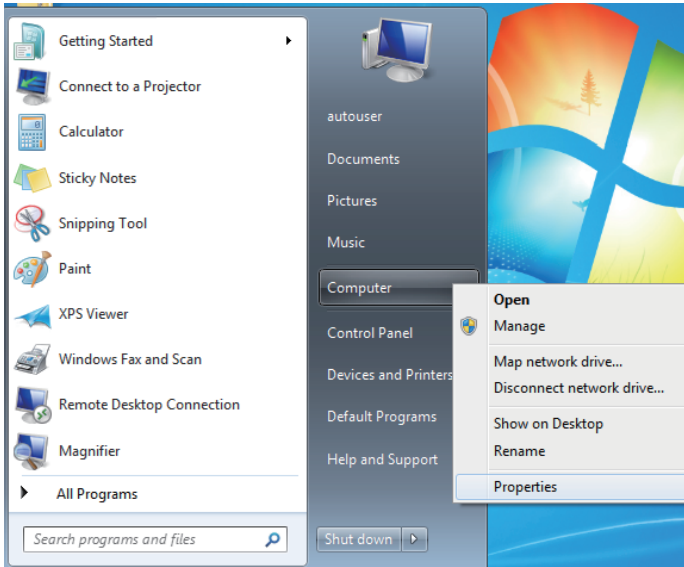
(3) Please open CA15 software and update.



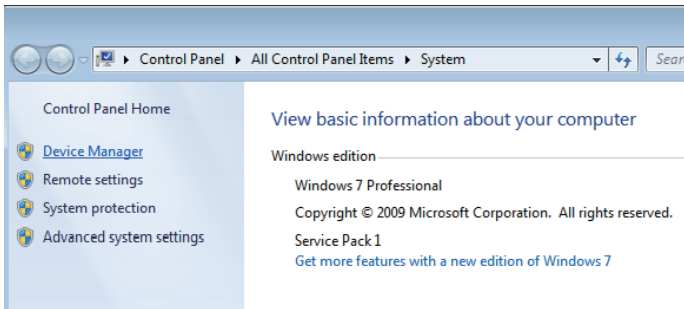
(4) After installation, CA15 will reboot .
 Close software and remove USB cable.



(5) How to check if PC/NB connects to CA15 properly?
Please right click " Computer" and select "Properties".



Select "Device Manager"



If successfully installed "Autoland PSMModule (COM3)" will be listed under Device Manager.

