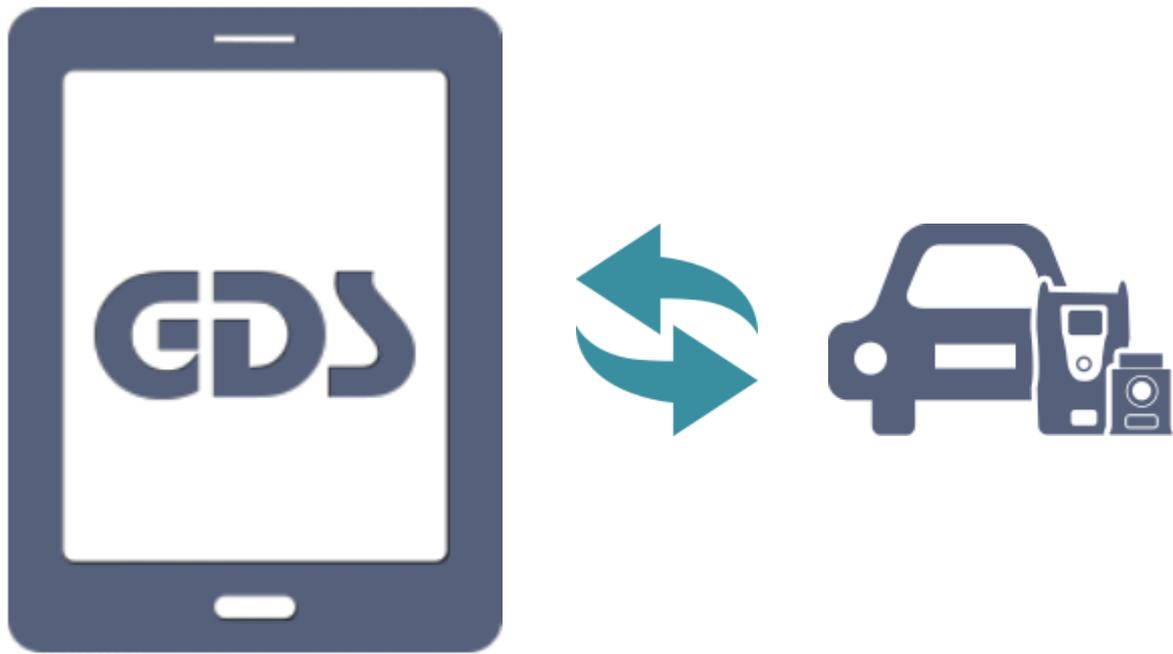


Data Analysis





This is to check the input/output information between sensors/actuators and ECU. For convenience, it supports text and graph mode.

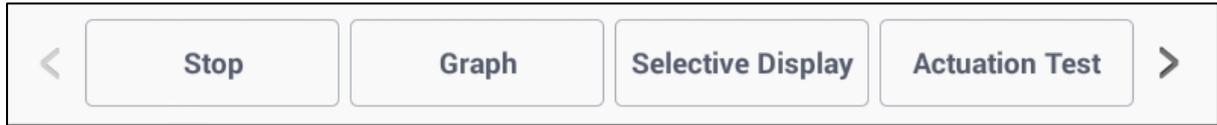
The saved data can be displayed on “Recorded Data.”

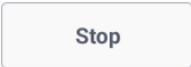
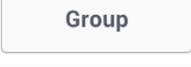
Data Analysis Screen :Text Mode

Sensor Name(97)	Value	Unit	Link Up
Battery Voltage	11.4	V	
Battery Voltage after IG Key	11.4	V	
Actual Engine Speed	0	RPM	
Target Idle RPM	1100	RPM	
Pressure Sensor(MAP) Signal Voltage	0.0	V	
Intake Manifold Pressure	100.0	hPa	
Water Temperature Voltage	5.0	V	
Water Temperature	-45.0	°C	
Ambient Air Temperature	20.2	°C	
Intake Air Temperature Voltage	5.0	V	
Intake Air Temperature	-48.0	°C	
Engine Oil Temperature	-39.8	°C	
O2 Sensor Binary Type Bank1 Upstream(Optional)	0.4	V	
O2 Sensor Binary Type Bank1 Downstream(Optional)	0.4	V	
Vehicle Speed	0.0	km/h	
Relative Charge Value	0.0	%	
Purge Control Valve	3.0	%	
Injection Time - Inj.1	18.8	mS	
Injection Time - Inj.2	18.8	mS	

◆ Function Buttons

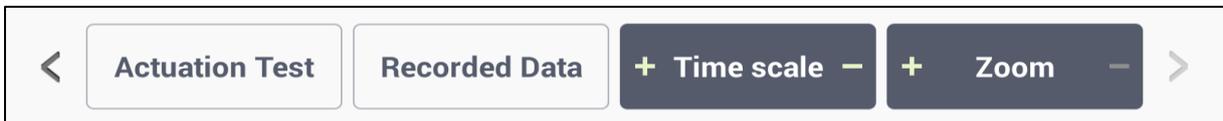
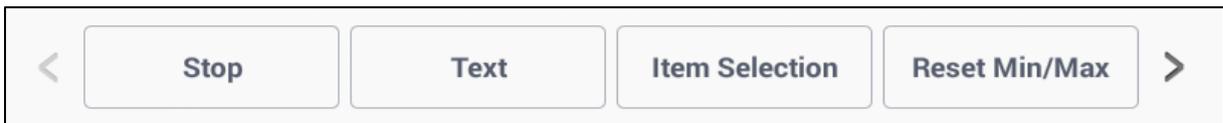
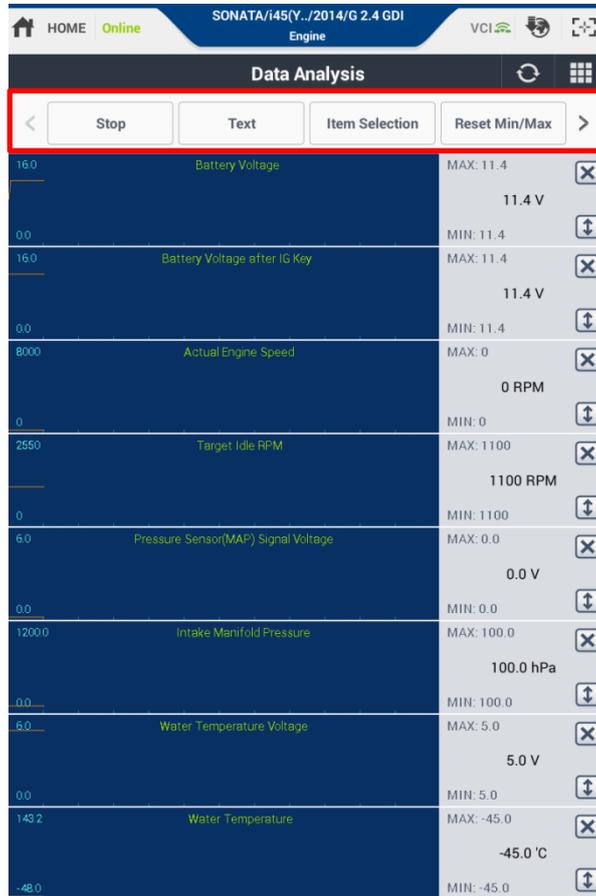
The below is the function buttons for Data Analysis.



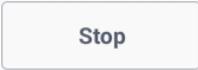
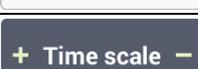
	Stops recording Sensor Data and the data can be saved by clicking the [Save] button. *The button toggles between [Stop] and [Start] button.
	Shows the current data value in a graph format. Able to convert to Text format.
	Refreshes data values for specific items. Toggles with [Normal Display] button.
	Performs Actuation test for the selected systems.
	Opens Files and reviews the recorded data on SD card.
	Shows sensor data by group
	All data, which has been recorded before [Stop] button is pressed, is saved as a file on SD card.

Data Analysis Screen :Graph Mode

This function is to display the sensor item value as a graph format. The user can see the value trend of the sensor data.



◆ Function Buttons

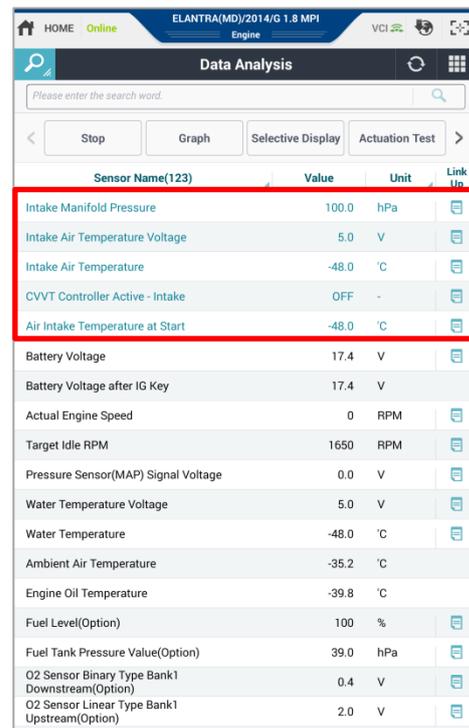
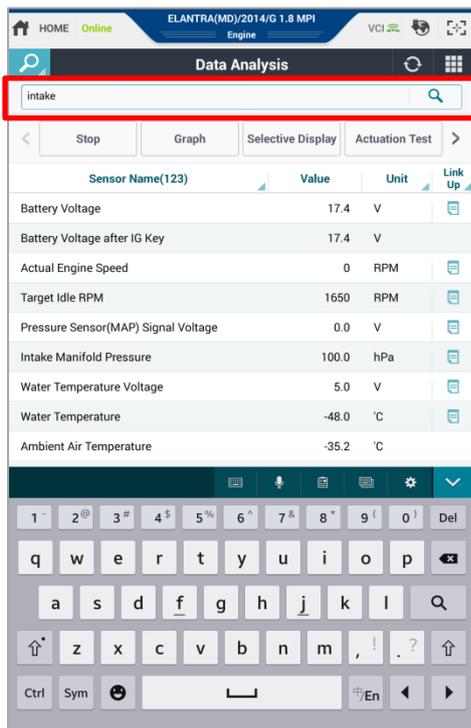
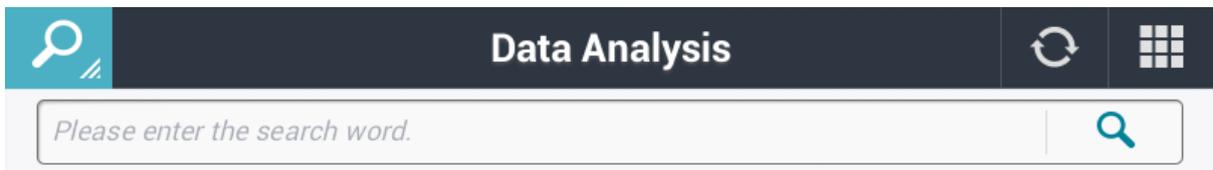
	<p>Stops recording Sensor Data and the data can be saved by clicking the [Save] button. *The button toggles between [Stop] and [Start] button.</p>
	<p>Shows the current data value as a text format. Able to convert to Graph format.</p>
	<p>Moves on to “Item Selection”</p>
	<p>Initializes the value of MAX/MIN on the right side.</p>
	<p>Performs Actuation test for the selected systems.</p>
	<p>Opens Files and reviews the recorded data on SD card.</p>
	<p>Magnifies/Reduces time base on the horizontal axis.</p>
	<p>Magnifies/Reduces outcome value base on the horizontal axis.</p>
	<p>All data, which has been recorded before [Stop] button is pressed, is saved as a file on SD card.</p>

Sensor Data Item Search & Sort

It supports searching/sorting function for data item to search easily as a reference to the diagnosis.

◆ Search

Tap  button on the left side of the Data Analysis title bar to open search bar. Enter the name (search words) on the search bar and tap  button to search.



◆ Sort

The data can be sorted in alphabetical or reverse alphabetical order which makes the users convenient.

Sensor Name	Value	Unit	Link Up
Accelerator Pedal Position Sensor	0.0	V	
Accelerator Pedal Position Sensor	0.0	V	
ETC Motor Duty	0.0	%	
Sensor reference voltage 1(TPS)	0.0	V	
Sensor Reference Voltage-2	5.0	V	
Sensor Reference Voltage-3	5.0	V	
Sensor Reference Voltage-4	5.0	V	
CVVT State	PASSIVE	-	
Current Position of Inlet Camshaft - Bank1	127.1	°CRK	
Current Position of Exhaust Camshaft - Bank1(Optional)	-112.0	°CRK	
Control Camshaft Position Setpoint Inlet - Bank1	127.1	°CRK	
Control Camshaft Position Setpoint Exhaust (Option)	-112.0	°CRK	
OCV Holding Pulse Width-Inlet CVVT	14.5	%	
OCV Holding Pulse Width-Exhaust CVVT(Optional)	14.5	%	



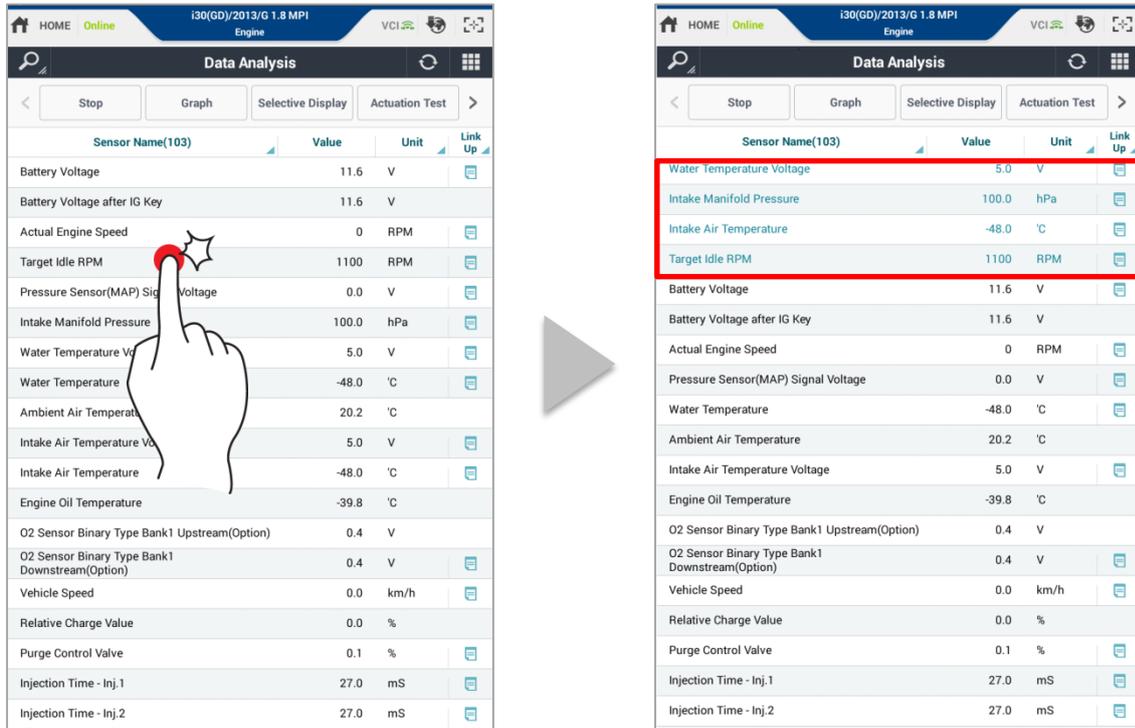
Sensor Name	Value	Unit	Link Up
Accelerator Pedal Position Sensor-1 Voltage	0.0	V	
Accelerator Pedal Position Sensor-2 Voltage	0.0	V	
ETC Motor Duty	0.0	%	
Sensor reference voltage 1(TPS)	0.0	V	
Sensor Reference Voltage-2	5.0	V	
Sensor Reference Voltage-3	5.0	V	
Sensor Reference Voltage-4	5.0	V	
CVVT State	PASSIVE	-	
Current Position of Inlet Camshaft - Bank1	127.1	°CRK	
Current Position of Exhaust Camshaft - Bank1(Optional)	-112.0	°CRK	
Control Camshaft Position Setpoint Inlet - Bank1	127.1	°CRK	
Control Camshaft Position Setpoint Exhaust (Option)	-112.0	°CRK	
OCV Holding Pulse Width-Inlet CVVT	14.5	%	
OCV Holding Pulse Width-Exhaust CVVT(Optional)	14.5	%	

A - Z	Sorts sensor items in alphabetical order.
Z - A	Sorts sensor items in reverse alphabetical order.
Default	Sorts sensor items in the basic order.

FIX

This function is to fix the items at the top to diagnose the sensor data.

The fixed items, which will be located at the top of the page, can be shown as a graph format or be displayed selectively as the 2nd image below.



When a user taps a sensor item, it will be fixed at the top. And it will be unfixed when the user taps the fixed sensor item.

Sensor Data Measure Units change

Measure units on DATA Analysis can change temporarily on GDS Mobile setting except for the specific units.

The image illustrates the process of changing sensor data units in the GDS Mobile application. It consists of two screenshots of the 'Data Analysis' screen for a SONATA/i45(Y../2014/G 2.4 GDI Engine.

Left Screenshot: Shows the 'Data Analysis' screen with a list of sensors. A red box highlights the navigation bar containing 'Stop', 'Graph', 'Selective Display', and 'Actuation Test'. A hand icon points to the 'hPa' unit for the 'Adapted Ambient Pressure' sensor.

Sensor Name	Value	Unit	Link Up
Ignition Output Value - Cyl4	0.0	°CRK	
Engine Operating Status	Stop	-	
Calculated Oil Temperature	-40	°C	
Adapted Ambient Pressure	999.9	hPa	
A/C Pressure Voltage	0.0	V	
A/C Pressure	0	psi	
Internal Resistance of Upstream Oxygen Sensor	65535	Ohm	
Internal Resistance of Downstream Oxygen Sensor	65535	Ohm	
Required Lambda	1.0		
Lambda Sensor Correction Value - Bank1	0.0	%	
Off Duration O2 sensor Heating Upstream Catalyst Bank1	0.0	%	
Off Duration O2 sensor Heating Downstream Catalyst Bank1	0.0	%	
Fuel Adaption (Idle) - Bank1	0.0	%	
Fuel Adaption (Part Load) - Bank1	0.0	%	
Ambient Air Temperature	20.2	°C	
Intake Manifold Pressure	100.0	hPa	
Pressure Sensor(MAP) Signal Voltage	0.0	V	
Water Temperature Voltage	5.0	V	

Right Screenshot: Shows the 'Unit of Measure' dialog box. The 'hPa' unit is selected, and the 'OK' button is visible.

Unit of Measure	Default	mbar	bar
hPa	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
kPa	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MPa	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
mmHg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
inHg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
psi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The 'OK' button is located at the bottom of the dialog box.

Selective Display

The user can select data items and they are displayed at the top of the item list. Compared to Normal Display, it shows the data in detail.

Sensor Name(103)	Value	Unit	Link Up
Water Temperature Voltage	5.0	V	
Intake Manifold Pressure	100.0	hPa	
Intake Air Temperature	-48.0	°C	
Target Idle RPM	1100	RPM	
Battery Voltage	11.6	V	
Battery Voltage after IG Key	11.6	V	
Actual Engine Speed	0	RPM	
Pressure Sensor(MAP) Signal Voltage	0.0	V	
Water Temperature	-48.0	°C	
Ambient Air Temperature	20.2	°C	
Intake Air Temperature Voltage	5.0	V	
Engine Oil Temperature	-39.8	°C	
O2 Sensor Binary Type Bank1 Upstream(Optional)	0.4	V	
O2 Sensor Binary Type Bank1 Downstream(Optional)	0.4	V	
Vehicle Speed	0.0	km/h	
Relative Charge Value	0.0	%	
Purge Control Valve	0.1	%	
Injection Time - Inj.1	27.0	mS	
Injection Time - Inj.2	27.0	mS	



Sensor Name(103)	Value	Unit	Link Up
Water Temperature Voltage		V	
Intake Manifold Pressure		hPa	
Intake Air Temperature		°C	
Target Idle RPM		RPM	
Battery Voltage		V	
Battery Voltage after IG Key		V	
Actual Engine Speed		RPM	
Pressure Sensor(MAP) Signal Voltage		V	
Water Temperature		°C	
Ambient Air Temperature		°C	
Intake Air Temperature Voltage		V	
Engine Oil Temperature		°C	
O2 Sensor Binary Type Bank1 Upstream(Optional)		V	
O2 Sensor Binary Type Bank1 Downstream(Optional)		V	
Vehicle Speed		km/h	
Relative Charge Value		%	
Purge Control Valve		%	
Injection Time - Inj.1		mS	
Injection Time - Inj.2		mS	

Sensor Name(103)	Value	Unit	Link Up
Water Temperature Voltage	5.0	V	
Intake Manifold Pressure	100.0	hPa	
Intake Air Temperature	-48.0	°C	
Target Idle RPM	1100	RPM	
Battery Voltage		V	
Battery Voltage after IG Key		V	
Actual Engine Speed		RPM	
Pressure Sensor(MAP) Signal Voltage		V	
Water Temperature		°C	
Ambient Air Temperature		°C	
Intake Air Temperature Voltage		V	
Engine Oil Temperature		°C	
O2 Sensor Binary Type Bank1 Upstream(Optional)		V	
O2 Sensor Binary Type Bank1 Downstream(Optional)		V	
Vehicle Speed		km/h	
Relative Charge Value		%	
Purge Control Valve		%	
Injection Time - Inj.1		mS	
Injection Time - Inj.2		mS	

Step1

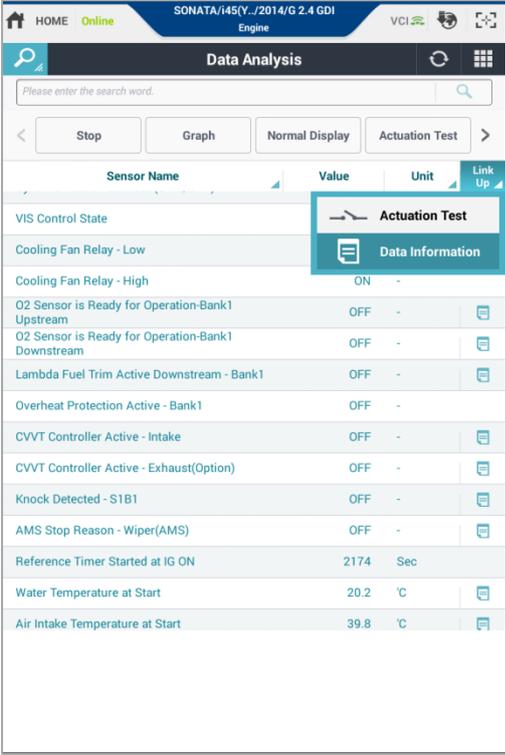
- 1 Fix the sensor item
- 2 Tap [Selective Display] button above.

Link Up

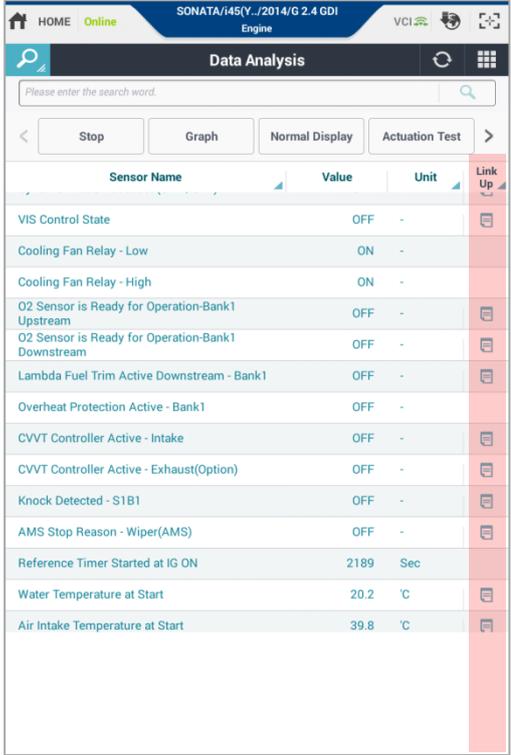
When there is Service Information or Actuation Test item for each sensor Item,  will be displayed on the right side of the sensor data item bar.

◆ Data Information

When there is Service Information item for each sensor item,  will be shown on the right side of each sensor item bar.



Sensor Name	Value	Unit	Link Up
VIS Control State			
Cooling Fan Relay - Low			
Cooling Fan Relay - High	ON	-	
O2 Sensor is Ready for Operation-Bank1 Upstream	OFF	-	
O2 Sensor is Ready for Operation-Bank1 Downstream	OFF	-	
Lambda Fuel Trim Active Downstream - Bank1	OFF	-	
Overheat Protection Active - Bank1	OFF	-	
CVVT Controller Active - Intake	OFF	-	
CVVT Controller Active - Exhaust(Optional)	OFF	-	
Knock Detected - S1B1	OFF	-	
AMS Stop Reason - Wiper(AMS)	OFF	-	
Reference Timer Started at IG ON	2174	Sec	
Water Temperature at Start	20.2	°C	
Air Intake Temperature at Start	39.8	°C	



Sensor Name	Value	Unit	Link Up
VIS Control State	OFF	-	
Cooling Fan Relay - Low	ON	-	
Cooling Fan Relay - High	ON	-	
O2 Sensor is Ready for Operation-Bank1 Upstream	OFF	-	
O2 Sensor is Ready for Operation-Bank1 Downstream	OFF	-	
Lambda Fuel Trim Active Downstream - Bank1	OFF	-	
Overheat Protection Active - Bank1	OFF	-	
CVVT Controller Active - Intake	OFF	-	
CVVT Controller Active - Exhaust(Optional)	OFF	-	
Knock Detected - S1B1	OFF	-	
AMS Stop Reason - Wiper(AMS)	OFF	-	
Reference Timer Started at IG ON	2189	Sec	
Water Temperature at Start	20.2	°C	
Air Intake Temperature at Start	39.8	°C	

Tap  icon, Data Information related to the sensor item will be shown at the bottom of the screen.

HOME Online SONATA/i45(Y../2014/G 2.4 GDI Engine VCI

Data Analysis

Please enter the search word.

Stop Graph Normal Display Actuation Test

Sensor Name	Value	Unit	Link Up
VIS Control State	OFF	-	
Cooling Fan Relay - Low	ON	-	

Data Information

- Intake Valve Control Solenoid Circuit-Low (Bank 1)

Intake Valve Control Solenoid Circuit-Low (Bank 1)

General Description

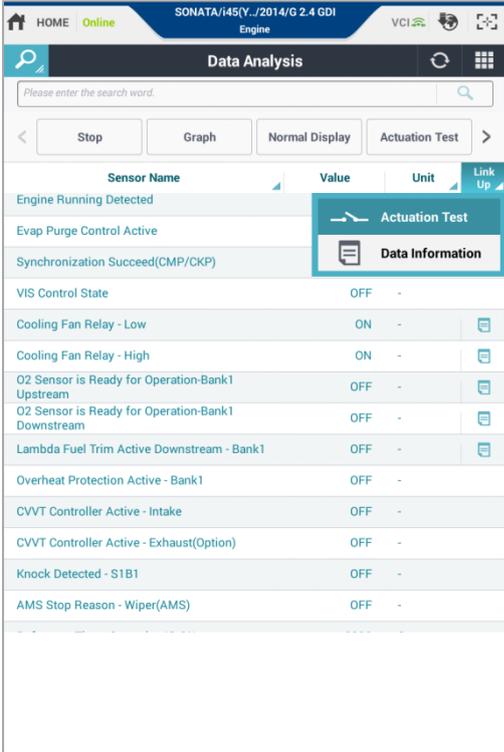
The CVVT (Continuously Variable Valve Timing) system is installed to the chain sprocket of the camshafts. This system controls the camshaft to provide optimal valve timing. The PCM/ECM controls the Oil Control Valve(OCV), based on the signals output from air flow, throttle position and engine coolant temperature. The CVVT controller regulates the camshaft angle using oil pressure through the OCV. As result, the relative position between the camshaft and the crankshaft becomes optimal, and the engine torque improves, fuel economy improves, exhaust emissions decrease under overall driving conditions.

Component Location

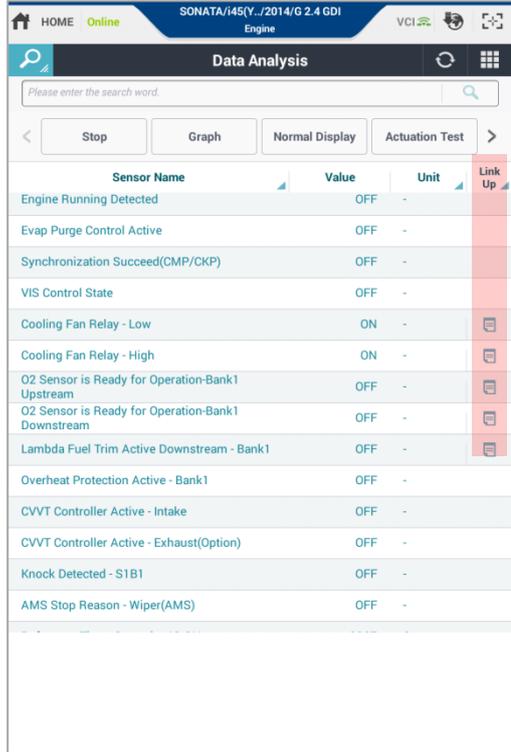
◆ Actuation Test

When there is Actuation test item for each sensor item,  will be shown on the right side of each sensor item bar.

Tap  icon, users can check the name of the Actuation test and perform the test immediately by tapping the item.

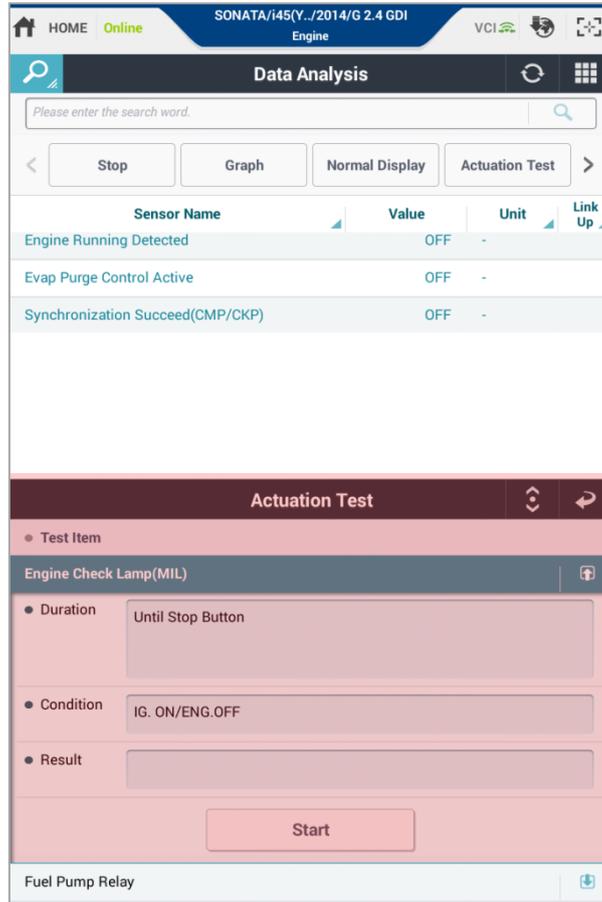


Sensor Name	Value	Unit	Link Up
Engine Running Detected			
Evap Purge Control Active			
Synchronization Succeed(CMP/CKP)			
VIS Control State	OFF	-	
Cooling Fan Relay - Low	ON	-	
Cooling Fan Relay - High	ON	-	
O2 Sensor is Ready for Operation-Bank1 Upstream	OFF	-	
O2 Sensor is Ready for Operation-Bank1 Downstream	OFF	-	
Lambda Fuel Trim Active Downstream - Bank1	OFF	-	
Overheat Protection Active - Bank1	OFF	-	
CVVT Controller Active - Intake	OFF	-	
CVVT Controller Active - Exhaust(Optional)	OFF	-	
Knock Detected - S1B1	OFF	-	
AMS Stop Reason - Wiper(AMS)	OFF	-	

Sensor Name	Value	Unit	Link Up
Engine Running Detected	OFF	-	
Evap Purge Control Active	OFF	-	
Synchronization Succeed(CMP/CKP)	OFF	-	
VIS Control State	OFF	-	
Cooling Fan Relay - Low	ON	-	
Cooling Fan Relay - High	ON	-	
O2 Sensor is Ready for Operation-Bank1 Upstream	OFF	-	
O2 Sensor is Ready for Operation-Bank1 Downstream	OFF	-	
Lambda Fuel Trim Active Downstream - Bank1	OFF	-	
Overheat Protection Active - Bank1	OFF	-	
CVVT Controller Active - Intake	OFF	-	
CVVT Controller Active - Exhaust(Optional)	OFF	-	
Knock Detected - S1B1	OFF	-	
AMS Stop Reason - Wiper(AMS)	OFF	-	

HOME Online i30(GD)/2014/G 1.8 MPI Engine VCI			
Data Analysis			
Stop		Graph	
Selective Display		Actuation Test	
Sensor Name(103)	Value	Unit	Link Up
Battery Voltage	11.6	V	
■ Data Information	General Information		
■ Actuation Test	Fan Motor Control-High Speed		
■ Actuation Test	Fan Motor Control-Low Speed		
■ Actuation Test	Main Relay		
Battery Voltage after IG Key	11.6	V	
Actual Engine Speed	0	RPM	
Target Idle RPM	1100	RPM	
Pressure Sensor(MAP) Signal Voltage	0.0	V	
Intake Manifold Pressure	100.0	hPa	
Water Temperature Voltage	5.0	V	
Water Temperature	-48.0	°C	
Ambient Air Temperature	20.2	°C	
Intake Air Temperature Voltage	5.0	V	
Intake Air Temperature	-48.0	°C	
Engine Oil Temperature	-39.8	°C	
O2 Sensor Binary Type Bank1 Upstream(Optional)	0.4	V	
O2 Sensor Binary Type Bank1 Downstream(Optional)	0.4	V	
Vehicle Speed	0.0	km/h	



Refer to Actuation Test about the detailed explanation.

Actuation Test Interlock

Actuation test list supported by selected system can be checked at the bottom of the Data Analysis screen and it can be performed.

The screenshot shows the 'Data Analysis' screen for a SONATA/i45(Y./2014/G 2.4 GDI Engine. The top navigation bar includes 'HOME', 'Online', and 'VCI'. Below the search bar, there are tabs for 'Stop', 'Graph', 'Normal Display', and 'Actuation Test'. The main area displays a table of sensor data:

Sensor Name	Value	Unit	Link Up
Engine Running Detected	OFF	-	
Evap Purge Control Active	OFF	-	
Synchronization Succeed(CMP/CKP)	OFF	-	

At the bottom, there is an 'Actuation Test' section with a list of test items, each with a download icon:

- Engine Check Lamp(MIL)
- Fuel Pump Relay
- Fan Motor Control-High Speed
- Fan Motor Control-Low Speed
- Main Relay
- Canister Purge Valve
- Oil Control Valve - Intake Bank1
- Oil Control Valve - Exhaust Bank 1 (Option)
- Ignition Coil Enable/Disable-#1



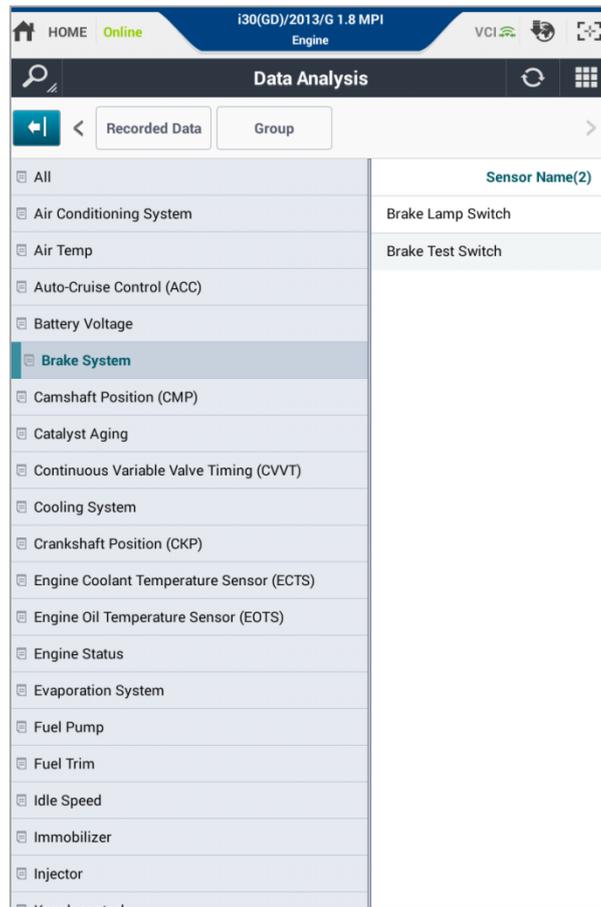
This screenshot shows the configuration screen for the 'Engine Check Lamp(MIL)' actuation test. The 'Actuation Test' tab is selected, and the test item is highlighted. The configuration fields are:

- Duration:** Until Stop Button
- Condition:** IG. ON/ENG.OFF
- Result:** (Empty field)

A 'Start' button is visible at the bottom of the configuration area. Below the configuration, the 'Fuel Pump Relay' test item is partially visible.

Data Item Fix by Grouping

The sensor items are specified by the group as below.



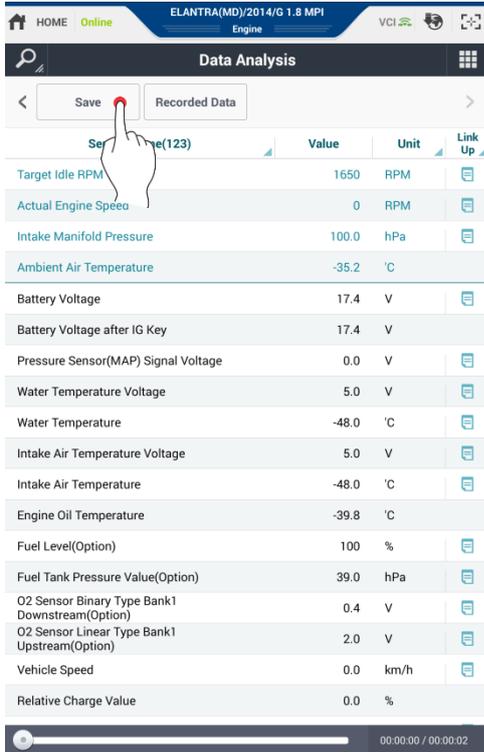
The screenshot shows a mobile application interface for 'Data Analysis'. At the top, there is a status bar with 'HOME Online', 'i30(GD)/2013/G 1.8 MPI Engine', and 'VCI'. Below the status bar is a navigation bar with a search icon, 'Data Analysis', a refresh icon, and a grid icon. Underneath is a sub-navigation bar with 'Recorded Data' and 'Group' tabs. The main content area is a list of sensor groups, with 'Brake System' selected. To the right of the list is a table with the header 'Sensor Name(2)' and two rows of sensor names: 'Brake Lamp Switch' and 'Brake Test Switch'.

	Sensor Name(2)
All	
Air Conditioning System	Brake Lamp Switch
Air Temp	Brake Test Switch
Auto-Cruise Control (ACC)	
Battery Voltage	
Brake System	
Camshaft Position (CMP)	
Catalyst Aging	
Continuous Variable Valve Timing (CVVT)	
Cooling System	
Crankshaft Position (CKP)	
Engine Coolant Temperature Sensor (ECTS)	
Engine Oil Temperature Sensor (EOTS)	
Engine Status	
Evaporation System	
Fuel Pump	
Fuel Trim	
Idle Speed	
Immobilizer	
Injector	
Knock Control	

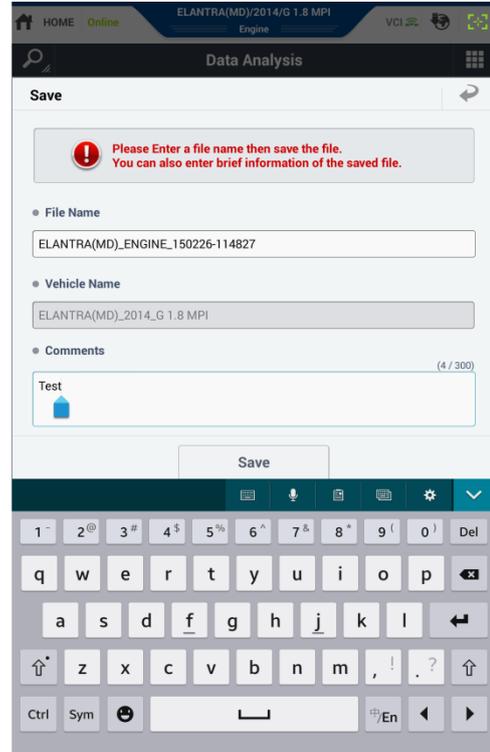
Data Save

All the data, which has been recorded, will be saved as a file on SD card by pressing the [Save] button.

◆ Text Mode



Serial No. (123)	Value	Unit	Link Up
Target Idle RPM	1650	RPM	
Actual Engine Speed	0	RPM	
Intake Manifold Pressure	100.0	hPa	
Ambient Air Temperature	-35.2	°C	
Battery Voltage	17.4	V	
Battery Voltage after IG Key	17.4	V	
Pressure Sensor(MAP) Signal Voltage	0.0	V	
Water Temperature Voltage	5.0	V	
Water Temperature	-48.0	°C	
Intake Air Temperature Voltage	5.0	V	
Intake Air Temperature	-48.0	°C	
Engine Oil Temperature	-39.8	°C	
Fuel Level(Optional)	100	%	
Fuel Tank Pressure Value(Optional)	39.0	hPa	
O2 Sensor Binary Type Bank1 Downstream(Optional)	0.4	V	
O2 Sensor Linear Type Bank1 Upstream(Optional)	2.0	V	
Vehicle Speed	0.0	km/h	
Relative Charge Value	0.0	%	



Save

! Please Enter a file name then save the file.
You can also enter brief information of the saved file.

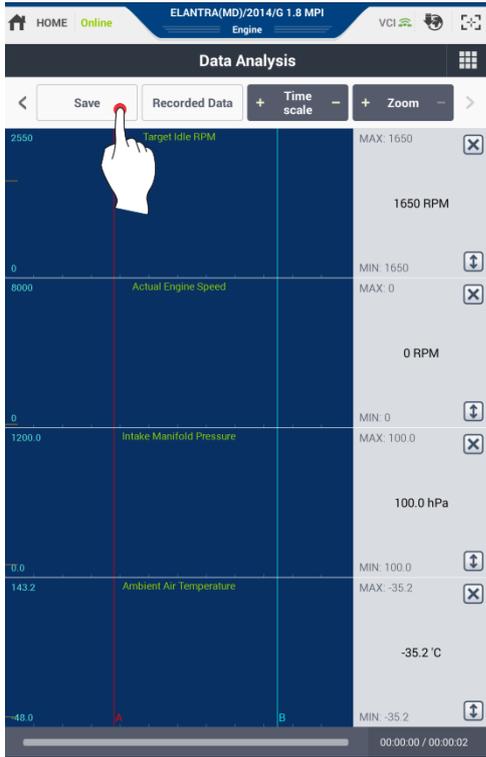
• File Name
ELANTRA(MD)_ENGINE_150226-114827

• Vehicle Name
ELANTRA(MD)_2014_G 1.8 MPI

• Comments (4 / 300)
Test

Save

◆ Graph Mode



The screenshot shows the 'Save' dialog box. It contains a red warning icon and the text: 'Please Enter a file name then save the file. You can also enter brief information of the saved file.' Below this are three input fields: 'File Name' with the value 'ELANTRA(MD)_ENGINE_150226-114907', 'Vehicle Name' with the value 'ELANTRA(MD)_2014_G 1.8 MPI', and 'Comments' with the value 'Test'. A 'Save' button is located at the bottom of the dialog.

Recorded Data Display

The saved sensor data, which is saved on SD Card, can be loaded and be displayed.

◆ Text Mode

Sensor Name	Value	Unit	Link Up
Battery Voltage	11.6	V	
Battery Voltage after IG Key	11.6	V	
Actual Engine Speed	0	RPM	
Target Idle RPM	1100	RPM	
Pressure Sensor(MAP) Signal Voltage	0.0	V	
Intake Manifold Pressure	100.0	hPa	
Water Temperature Voltage	5.0	V	
Water Temperature	-48.0	°C	

Sensor Name	Value	Unit
Actual Engine Speed	0	RPM
Pressure Sensor(MAP) Signal Voltage	0.0	V
Water Temperature	-48.0	°C
Ambient Air Temperature	20.2	°C
Intake Air Temperature	-48.0	°C

◆ Graph Mode

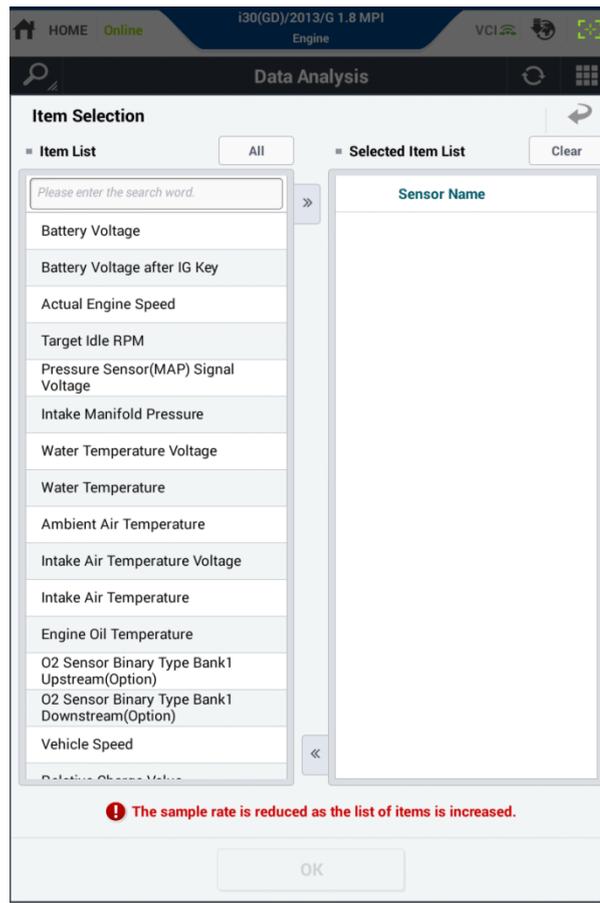
Item	MAX	MIN
Target Idle RPM	1650	1650
Actual Engine Speed	0	0
Intake Manifold Pressure	100.0	100.0
Ambient Air Temperature	-35.2	-35.2

	Stops recording sensor data and shows the recorded data.
	Shows the current data value as a graph format. Able to convert to Text format.
	Plays reverse with double speed.
	Plays reverse with normal speed.
	Pauses
	Plays with normal speed.
	Plays with double speed.

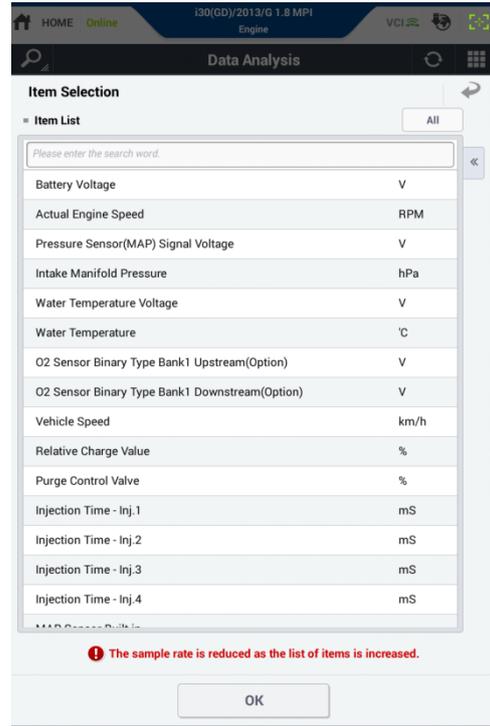
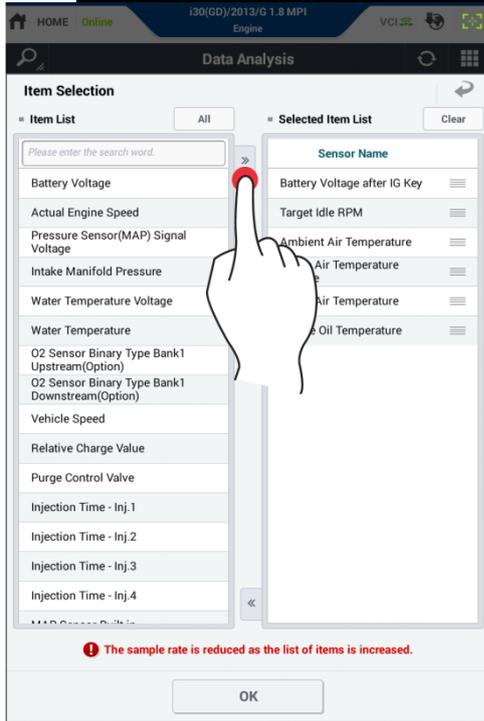
Data Analysis - Graph Mode

◆ Item Selection

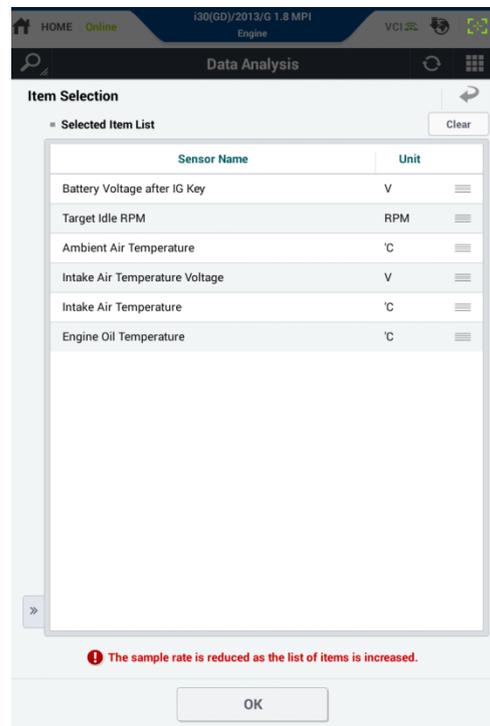
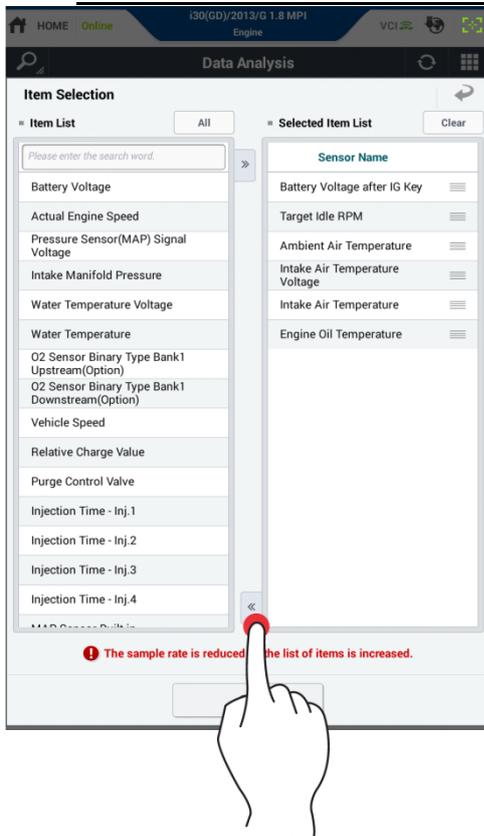
When sensor items are not fixed and switched to on a graph mode, to set the item the “Item Selection” screen appears. Please add / delete a sensor to read the following description.



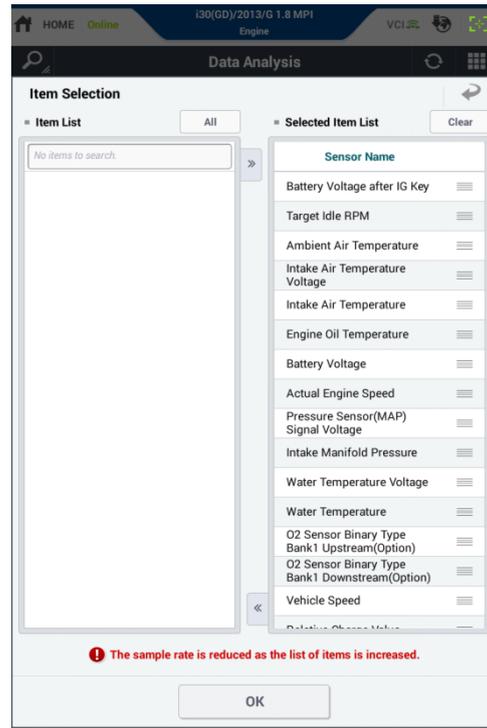
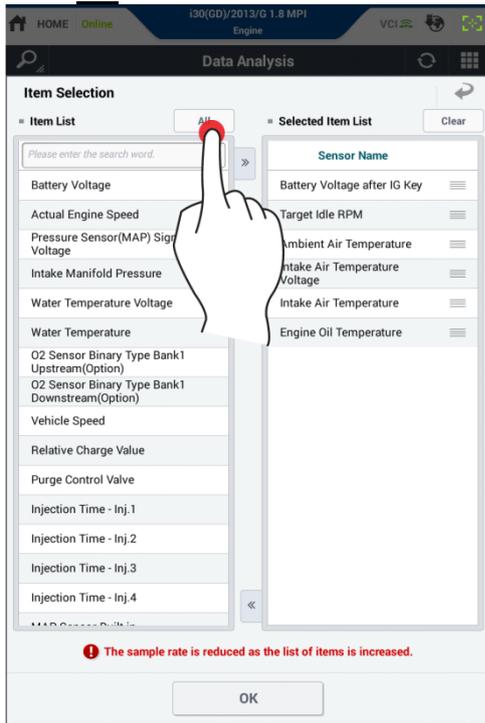
◆ Full Screen for Sensor Item List



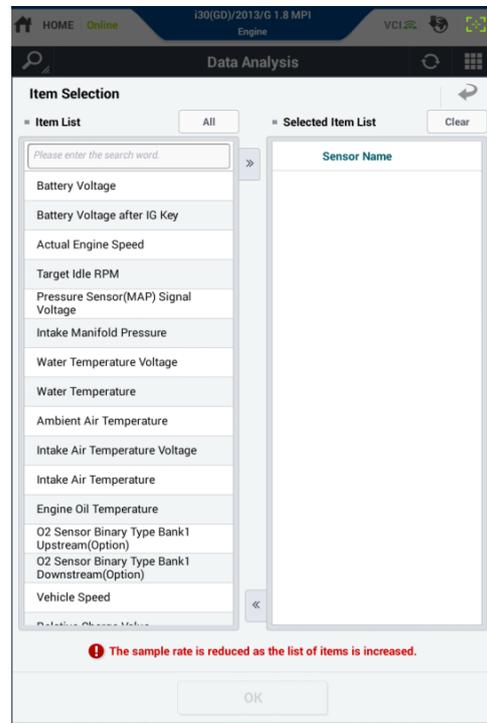
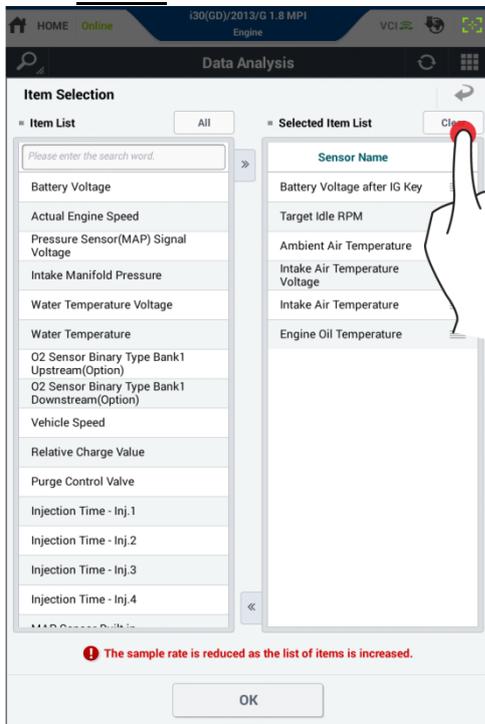
◆ Full Screen for Selected Item list



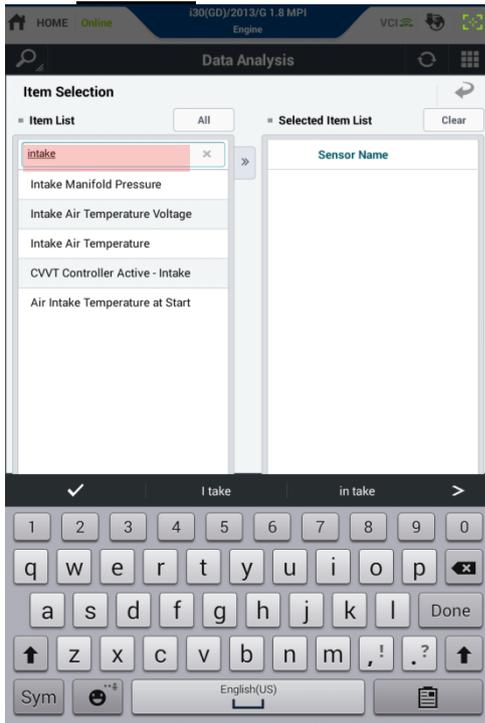
◆ All



◆ Clear

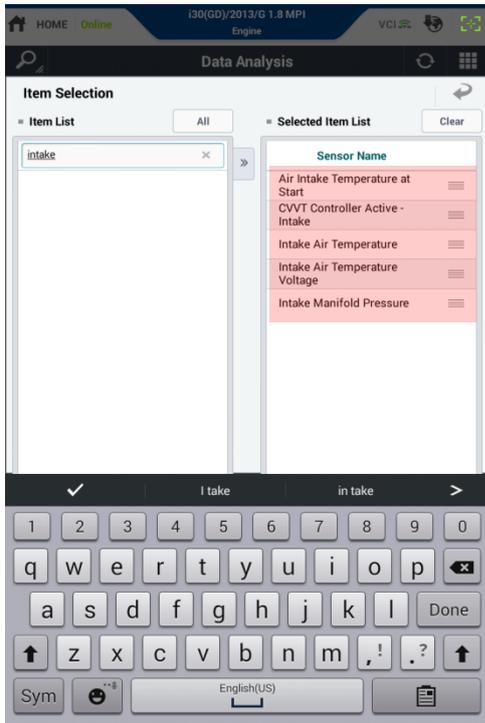


◆ Search



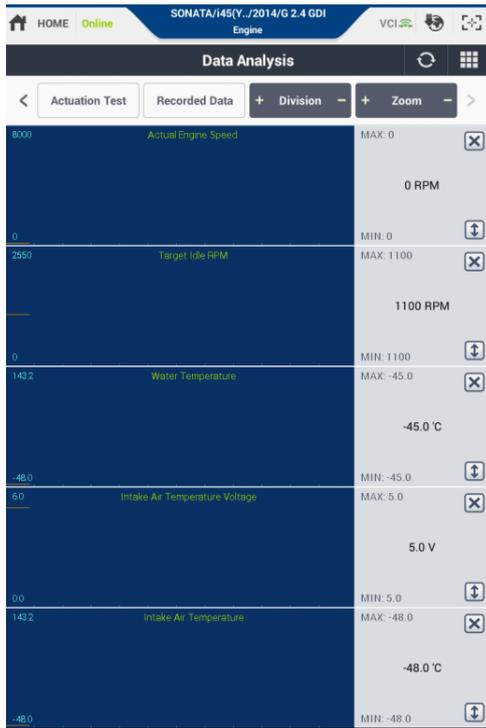
Step1

Enter search word in the search field



Step2

The Searched items are displayed on "Selected Item List".

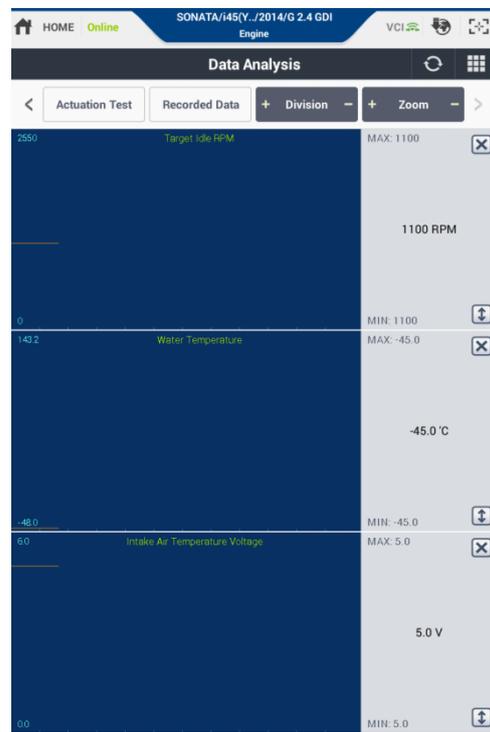
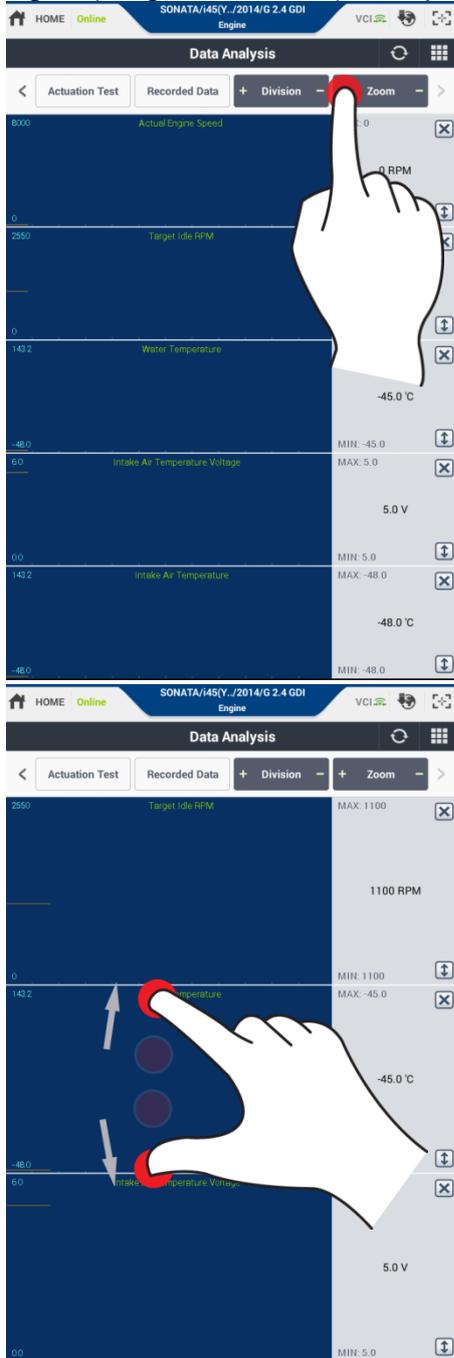


Step3

The graph mode data will be shown on the screen.

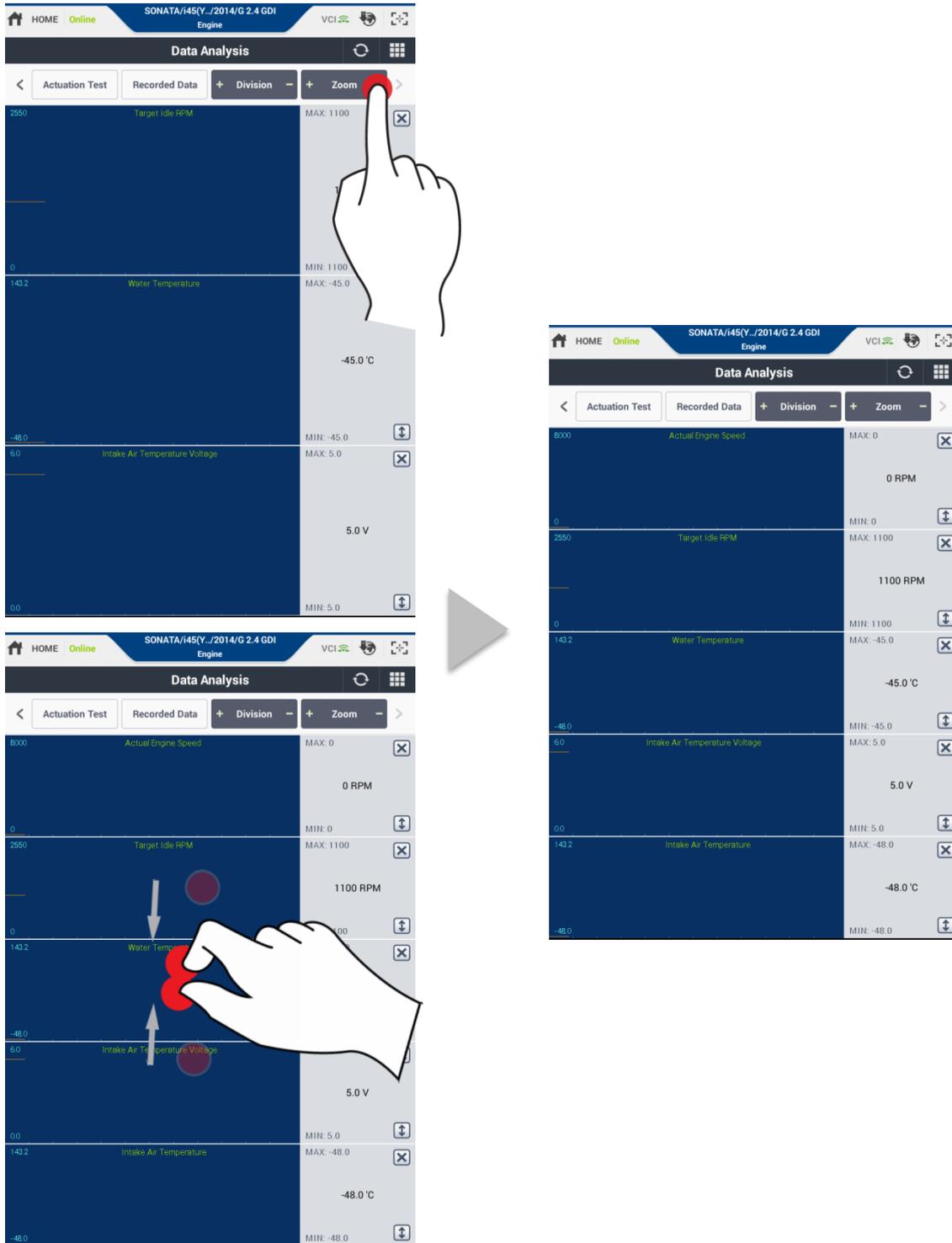
◆ Zoom in

Tap (+) on **Zoom** or perform finger zoom-out on the screen using two fingers (Finger Zoom out) to expand the screen.



◆ Zoom out

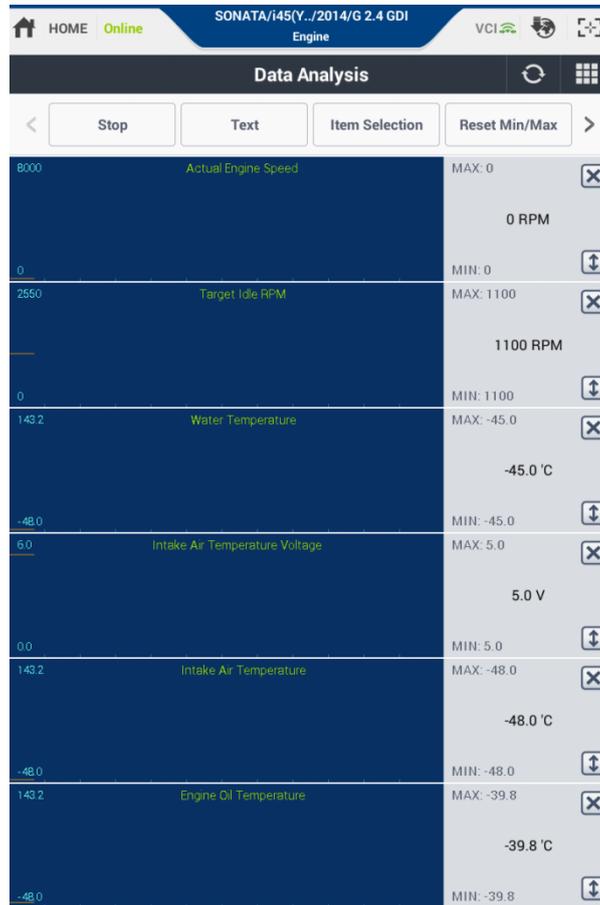
Tap (-) on **+ Zoom -** or perform finger zoom-in on the screen using two fingers(Finger Zoom out) to downsize the screen.



◆ Time scale Control

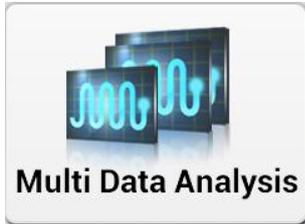
This is the function to control the time axis on Graph.

- ◆ Time scale + : Reduce one gradation of the time.
- ◆ Time scale - : Extend one gradation of the time.



◆ Recorded Data Review on Graph

Refer to Review Recorded Data



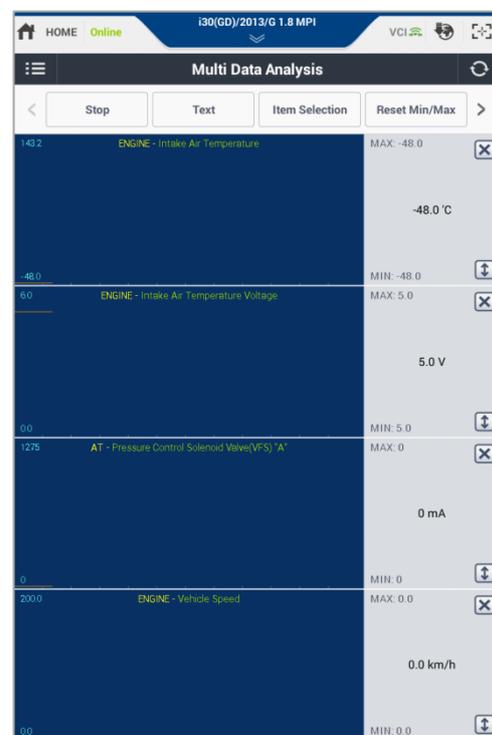
Function to check the input/output information of more than one system on the vehicle and display all of the values on the screen at the same time. This is only for CAN protocol system.

Screen Description

◆ Text Mode

System	Sensor Name(10)	Value	Unit	Link Up
ENGINE	Actual Engine Speed	0	RPM	
ENGINE	Target Idle RPM	1100	RPM	
ENGINE	Pressure Sensor(MAP) Signal Voltage	0.0	V	
ENGINE	Intake Air Temperature Voltage	5.0	V	
ENGINE	Intake Air Temperature	-48.0	°C	
ENGINE	O2 Sensor Binary Type Bank1 Downstream(Optional)	0.4	V	
ENGINE	Vehicle Speed	0.0	km/h	
AT	Next Gear Position	0	-	
AT	Shift Control Solenoid Valve E(SS-A)	OFF	-	
AT	Pressure Control Solenoid Valve(VFS) "A"	0	mA	

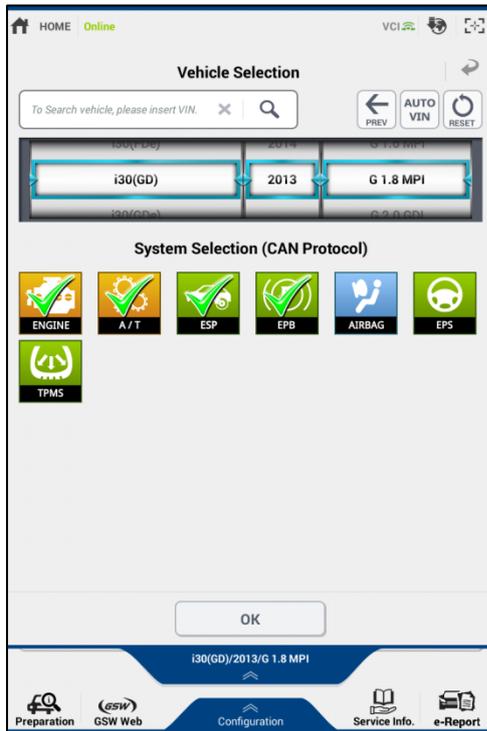
◆ Graph Mode



Notice

☞ This function is only for CAN Protocol systems. So the display may be different from other diagnosis functions (DTC Analysis, Data Analysis, Actuation Test, S/W Management)
* Refer to the chapter, "Data Analysis"

Multi Data Analysis System Selection



Step 1

- 1 Select systems to diagnose a vehicle. More than one system can be selected.
- 2 Tap [OK] button below.



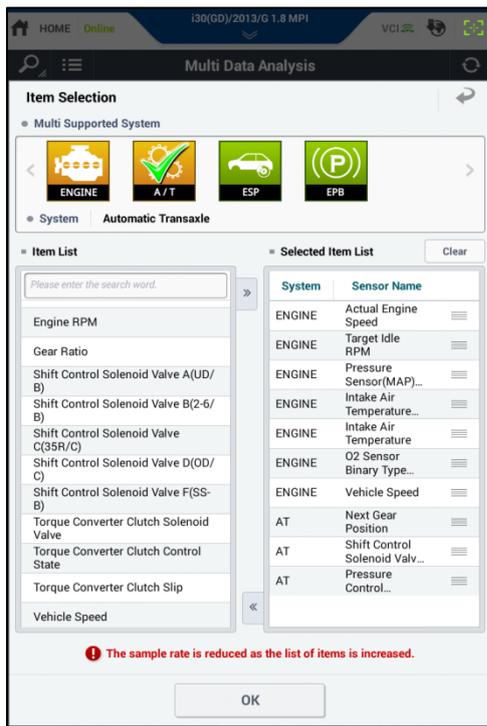
Notice

☞ Only **CAN Protocol** systems display on the Vehicle Selection.



Step2

Select sensor items on each system.



Step3

After selecting the sensor items, tap [OK] button at the bottom of the screen.

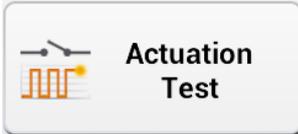
System	Sensor Name(10)	Value	Unit	Link Up
ENGINE	Actual Engine Speed	0	RPM	
ENGINE	Target Idle RPM	1100	RPM	
ENGINE	Pressure Sensor(MAP) Signal Voltage	0.0	V	
ENGINE	Intake Air Temperature Voltage	5.0	V	
ENGINE	Intake Air Temperature	-48.0	°C	
ENGINE	O2 Sensor Binary Type Bank1 Downstream(Optional)	0.4	V	
ENGINE	Vehicle Speed	0.0	km/h	
AT	Next Gear Position	0	-	
AT	Shift Control Solenoid Valve E(SS-A)	OFF	-	
AT	Pressure Control Solenoid Valve(VFS) 'A'	0	mA	

Step4

Check the values of Data Items in the selected systems.

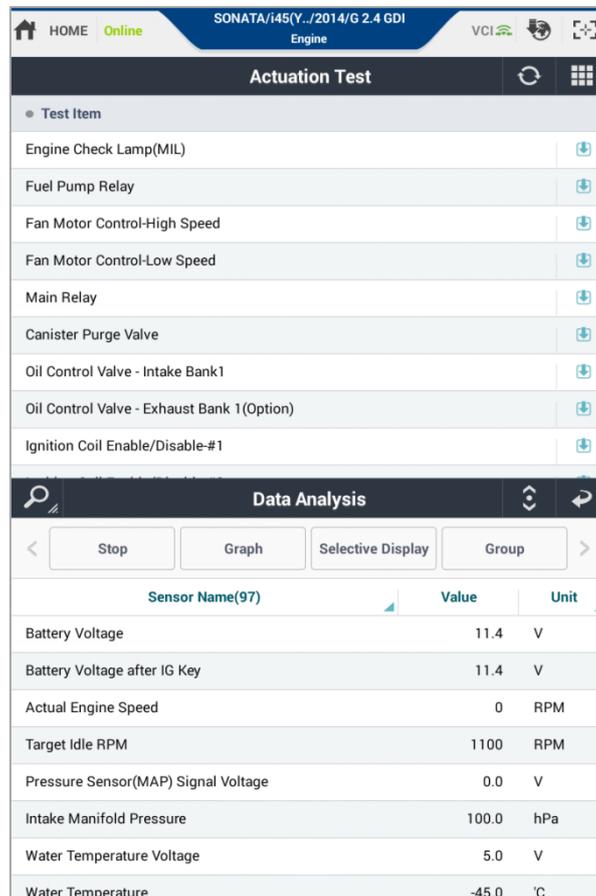
How to use function button of Multi Data Analysis

*Refer to "Data Analysis".



Function to check the sensor or the actuator to see if it works properly.

Screen Description



◆ Actuation Test

It displays Actuation Test Item supported on the selected vehicle and operates the selected actuator manually.

◆ Data Analysis

It displays the input/output value of sensor data when the user performs Actuation Test

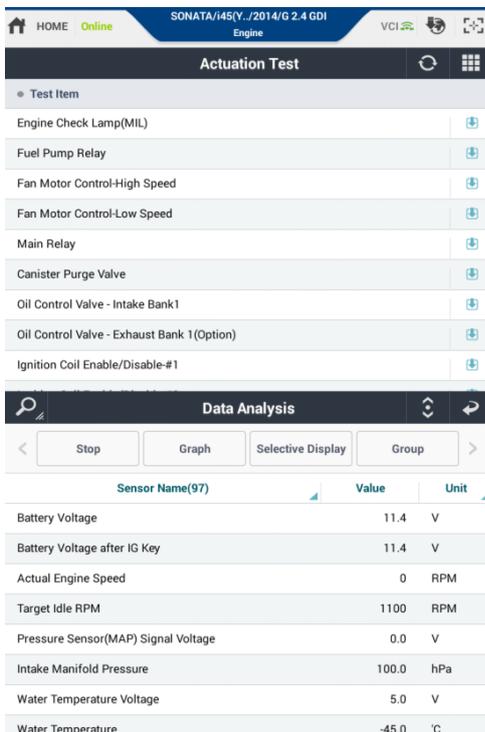
Actuation Test Operation



Step1

Select a vehicle and a system.

* Refer to “Vehicle Selection”



Step2

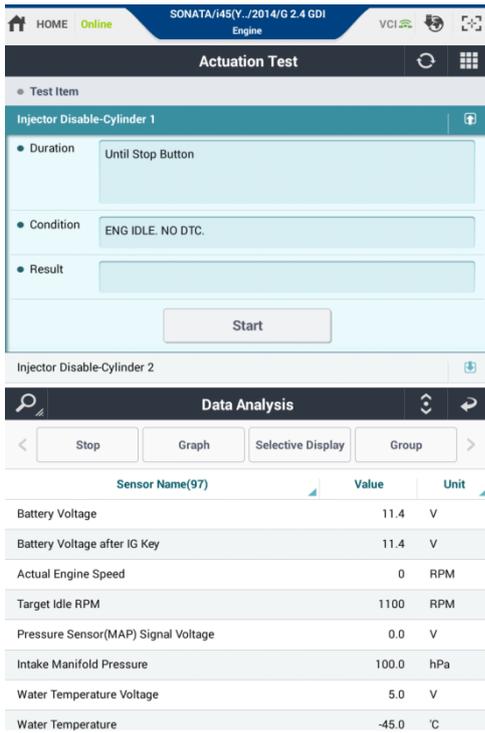
Select Actuation Test Item on the top screen.
Set Sensor Data Item on the bottom screen.

*Refer to “Data Analysis”.



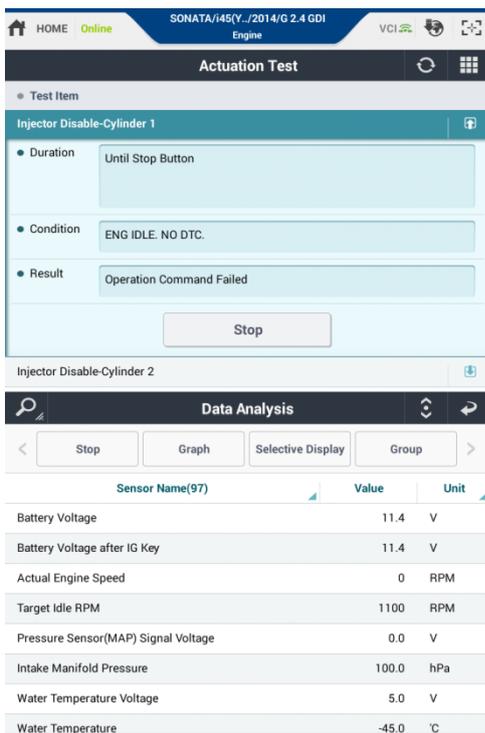
Notice

☞ Drag the screen to see the hidden part on Actuation test screen.



Step3

Check Duration and Condition and tap [Start] button below.



Step4

The result of Actuation Test displays on the screen.