3. Connect DSM to your laptop computer.
   - There are two options of USB and Wireless: you can choose either as you want.
   - For setting information, please refer to Chapter 2 : How to Install Program.
4. Turn on DSM.

   At this time, for the vehicle to which power is not supplied through the diagnosing connector, if the DSM battery's charging capacity is not enough, you must supply additional power. (Vehicle battery, and cigar cable etc.)
5. Select the vehicle and system you would like to diagnose from the vehicle menu, and then click the "Diagnose" icon.

Chapter 4: Initial Screen

Once the diagnosing program is run, the screen is displayed as shown in the Figure4.1 of Initial Screen, and their individual functions can be described as follows:

: To execute the functions of diagnosing vehicle malfunctions, of diagnosing and searching service date, and of operating actuator.

: During the diagnosing the vehicle, you can search for the information about Error code, component description on the sensoe data, error status, scan checkup, checking method, and wave form analysis.

: To perform the reprogramming work per vehicle. When in need of the reprogramming work, the reprogram item is displayed in the screen.

: To save the data on the occasion of error occurring through the balckbox switch and analyze it.

Chapter 4 : Initial Screen

: Function to verify the CAN signal that is sent and received on the specific module through the CAN line signal analysis.

: Function to measure the wave form, and ignition wave form of individual vehicle sensors.

: Function to set the program configurations.

Chapter 5: Diagnosing Vehicle

1. Diagnosis Function

- Check any problem in the car.
- Check the service data per sensor.
- Be able to carry out a unit test using the actuator driving function.

1) Select car & system

Model Select Window

1. Select the model.

Select System (without subsystem)

2. Select the system.

- Depending on the system, it may have the subsystem.

Select System (with subsystem)

System Select Window **Selected System Window**

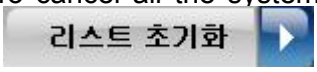
3. After choosing the Select System window to be diagnosed, double-click it with left button of the mouse to pop up the selected system.

- Several systems of the same model can be diagnosed.

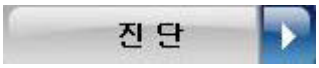
TIPS) Since it's possible to diagnose collectively without communicating individual systems, any problems in the entire systems can be simply checked.

*** To cancel Select System**

- To cancel the system selection, select the system to be canceled by the mouse and double-click it by its left button.

- To cancel all the systems selected, click the icon 

located in the lower part of the Diagnosis System box, which initialize the list.

4. Click the button 

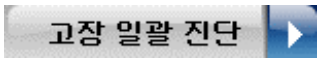
on the lower part of the screen to start the diagnosis for the system selected.

2) Diagnosis Results

- The diagnosis results for the selected system are displayed in five ways described below.

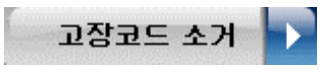
1. X number of error codes: The communication with the vehicle's ECU is successful, and there are X error codes detected.
2. No error code: The communication with the vehicle's ECU is successful and no error code is detected.
3. No response: The communication is tried, but no reply is made by the ECU.
4. Not supported: The communication Is not supported to the system selected.
5. Error code reading error: The communication to the ECU is made, but wrong error code(s) were read.

Figure5.1 Diagnosis Results with Multiple ECU Connections



: Re-diagnose collectively the selected systems.

: Eliminate collectively all the error codes of the systems on which they are detected.



: After selecting the system for which the user wants to eliminate the error codes, click it to delete them from the selected system.

* 고장 일괄 소거 / 고장코드 소거 **Function executing**

- All error codes of the entire systems the fault diagnosis carried out for are eliminated; the error codes per system can be erased.
- To use the function “Erase All Errors”, click the icon without selecting specific systems, resulted in removing all the error codes.
- To use the function “Erase Error Code”, select the system for which the error codes are erased.

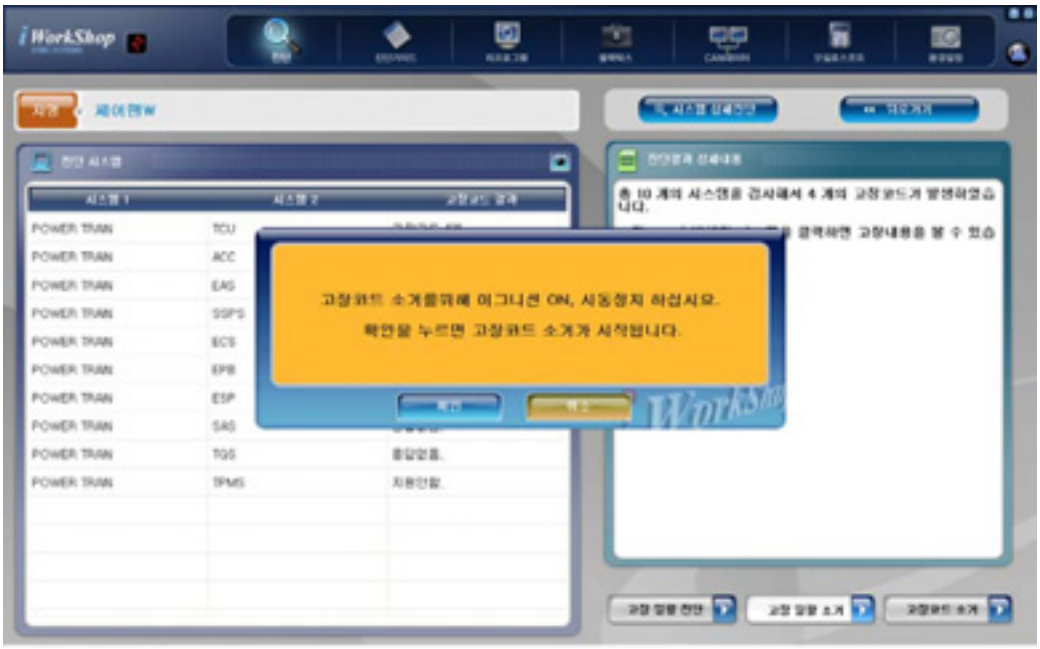


Figure 5.2 Erase Error Code

Erasing the error codes must be carried out on satisfying the error code eliminating conditions shown as in the screen of Erase Error Code of Figure 5.2.
If the conditions are met, the error codes may not be removed.

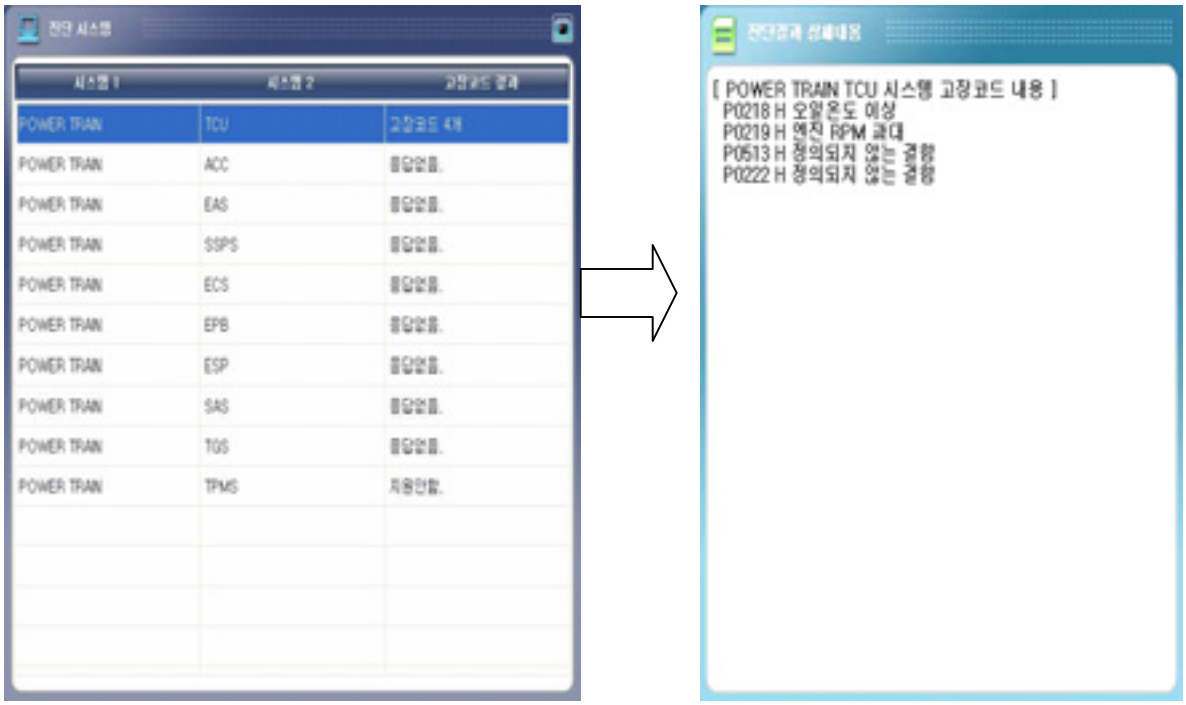
TIPS) Error codes are grouped in two: past error code and current error code.
If it is the past error code, executing the erasing command immediately erases it and no error codes are detected. If current one, but, executing it immediately erases the code, but, the error code is promptly detected again. In this case, the erroneous part must be checked and repaired, followed by re-erasing the error code.

시스템 상세진단 : Switch to the screen where functions like error codes, sensor output, forced drive, etc. for the selected system can be performed.

뒤로가기 - Detailed system diagnosis is described in the following section.

: Move to the previous car selecting screen.

When an error code detected, select the associated system to display the error code on the Detailed Diagnosis Results window.



3) Detailed System Diagnosis

- Functions such as fault diagnosis per system, sensor output, forced drive, device checkup, etc. can be carried out.

TIPS) If only one system is selected, the following steps are skipped and it moves into the detailed diagnosis mode.

*** Diagnosis steps**

1. Connect the car's diagnosis connector and DSM using the main cable.

- For details refer to Chapter 3 Connecting to the Car.

2. After selecting the car and the system to be diagnosed in the iWS diagnosis program, click the Diagnosis icon.

3. Place the cursor on the system the detailed diagnosis will be carried for.

4. Click the 

icon by the left button of the mouse.

TIPS) Place the mouse cursor on the system the detailed system diagnosis will be done for, and double-click it by the left button of the mouse to enter into the detailed system diagnosis mode.

5. Once starting the communication with the selected system, the following screen is displayed.
   - If failed to open the communication, check whether the connection to the car is appropriately made and the correct system is chosen.

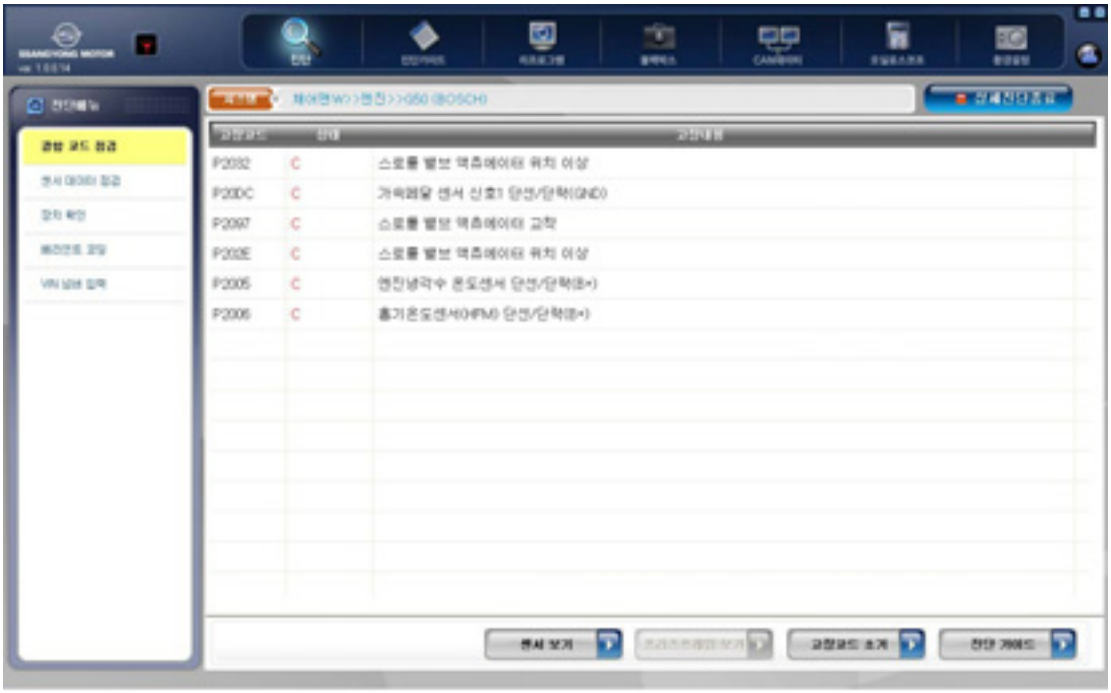


Figure 5.3 Detailed System Diagnosis Mode

4) Check Error Code

- Any faults in the system and the number of error codes can be checked.

Figure 5.4 Check Error Code

: Bring the screen where the error codes and sensor data are displayed.

: Show the value of the stored sensor data in the fault condition.

: Erase the detected error codes.

: After locating the cursor on the error code/sensor data item and clicking it, display the items necessary for car maintenance.

센서 보기

- Click this icon on the View Error Code window to show the error code search results and sensor data together.

Figure 5.5 Check Error Code / View Sensor

센서보기 취소 : Move back to the screen Check Error Code screen in Figure 5.4.

상세진단종료 : Quit the Detailed diagnosis mode and move to then Fault Diagnosis Results screen in Figure 5.1.

프리즈프레임 보기 : If there is a fault, the ECU stores the values of the service data items previously specified. These stored values of the items can be checked..

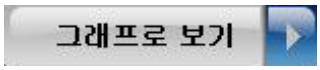
TIPS) Since there is no stored value in a car no problem is observed, this function is deactivated.

5) Check Sensor Data

- Data values of individual sensors in the car can be checked.

Figure 5.6 Check Sensor Data

: Move to the screen where both the sensor data and error code(s) can be seen together.



: Show the sensor data converted in graphical presentation.

: Start and stop storing the item data the user selects.

: Check the stored data.

: After locating the cursor on the error code/sensor data item required for help and clicking it, check the items necessary for car maintenance.

고장코드 보기

- Clicking the icon on the Sensor Data Search window retrieves the sensor data search results and error codes together.

Figure 5.7 Check Sensor Data / View Error Code

고장보기 취소 : Move to the Check Sensor Data screen in Figure 5.4.

그래프로 보기 / 파일저장 시작 / 저장데이터 보기

- Show in graph 8 items selected by the user at maximum out of sensor data items and store them for analysis.

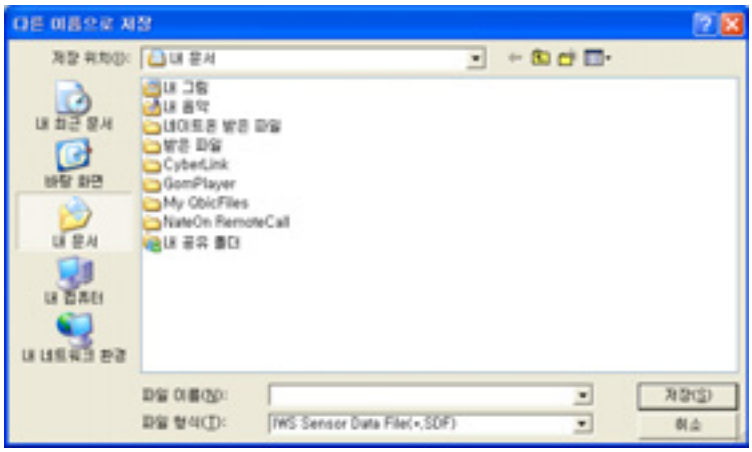
1. Locate the cursor on the item wanted to look at in graph, and double-click it by the left button of the mouse.
   - The selected item is fixed.
   - Fixing the selected can be done up to 8 items.

Clicking the icon 그래프로 보기 converts the selected item's data values into the graphical presentation.

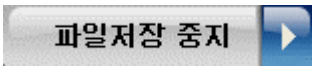
3. Click the icon 

.

4. The window where the location to save the file can be set is popped up.
- On the location the user designates, set the file name and click Save.



5. The file is saved.

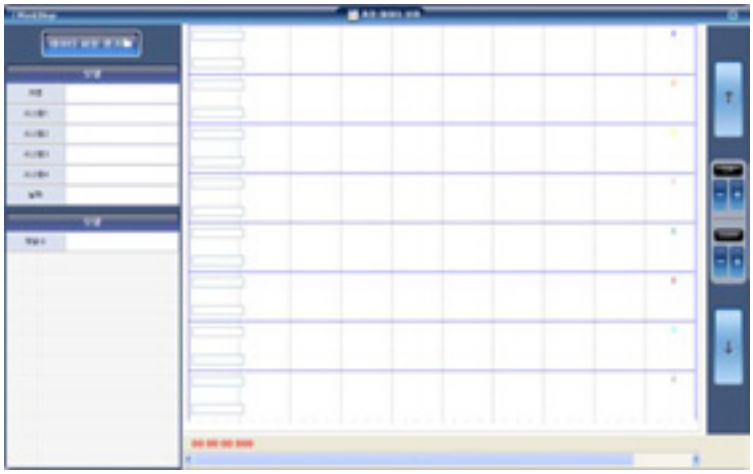
6. Click the icon 

to stop file save.

7. Click the icon 

.

8. The window View Stored Data is popped up.



9. Click the icon 

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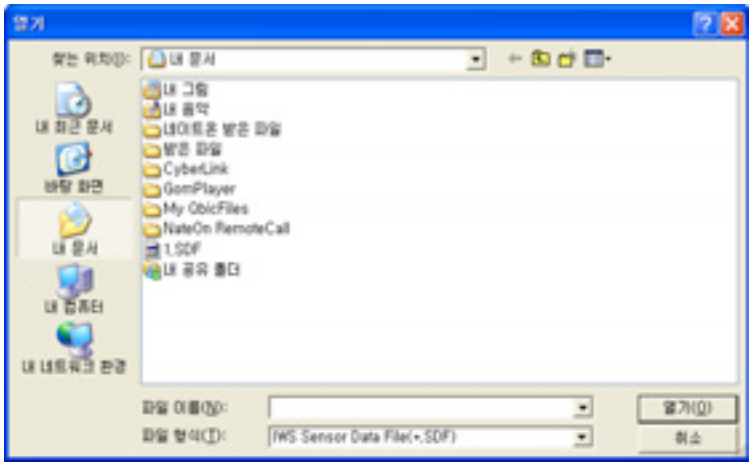
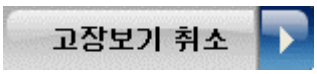
10. The window asking the location of stored data is shown up.
- Select the location of the stored, and click Open.



- Show the service data items in graphical view and error code items together.

Figure 5.8 Check Sensor Data / View Error Code



: The error code items disappear and switch to the entire graphical viewing mode.

: The service data item is changed to the text mode from the graphical one.

: When multiple service data items are stored, move around each of the items.

: When multiple service data items are stored, the number of the items to be displayed in the screen can be set from 1 up to 8.

: Enlarge or reduce the graph size of the stored data to view.

5) Forced Driving

- The forced driving item runs or stops the actuator and switches in force to see if the associated unit has problems or not.

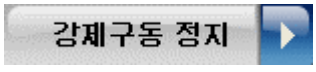
The forced driving test function is supported depending on car maker and model.

Figure 5.9 Forced Driving

: Clicking this icon on the Forced Driving window shows up the forced driving items and error code items together.

: Clicking this icon on the Forced Driving window shows up the forced driving items and service data items together.

: Start the test on the selected item.



: Stop the test on the selected item.

고장코드 보기 : Show the forced driving items and the error code items together.

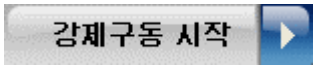
Figure 5.10 Forced Driving / View Error Code

센서데이터 보기 : Show the forced driving items and the sensor data items together.

Figure 5.11 Forced Driving / View Sensor Data

: The driving signal is arbitrarily sent to the associated actuator through the ECU, and the change in the actuator can be observed.

1. Select the test item.

2. Click the icon 

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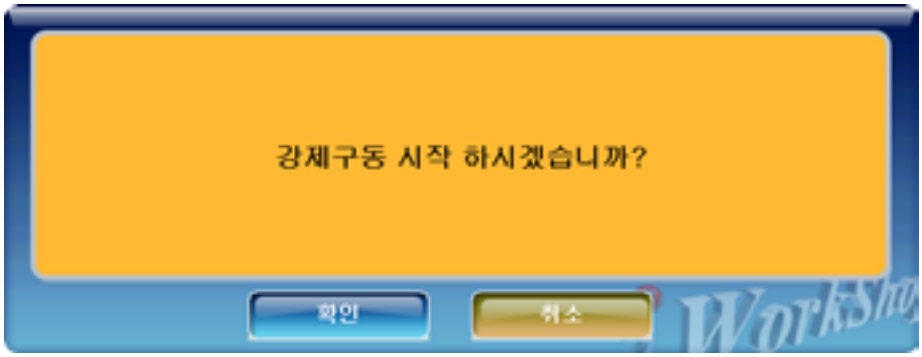
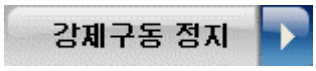
3. Click OK on the window displayed.
   The test on the selected item is started.



4. Clicking the key 

stops the actuator testing.

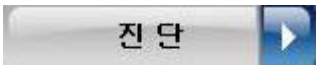
- Clicking this key stops the testing in the middle.
- Pushing the ESC key or switching the test item by the ▲/▼ key on the Carmanskin Lite body frame quits the testing.

TIPS) The evaluation of the actuator test results is done through driving sound of the actuator and switches and change in RPM of the car.
Therefore, the actuator test must be performed in a place where no noise is or it's quiet if possible.

6) Auto Diagnosis

- Using the car specifications recorded in the ECU, the entire systems mounted in the car can be automatically diagnosed without selecting each system. The more systems mounted to the vehicle is the more convenient in using the auto diagnosis function.

Figure 5.12 Auto Diagnosis Function

1. Select the vehicle.
2. Select the engine type (gasoline, diesel, LPG, etc.).
3. Select the engine displacement.
4. Click the icon  .
5. Other systems related to the associated engine type are detected and displayed in the Diagnosis System window.
6. Once clicking the icon 

, the diagnosis starts and the systems equipped in the car are automatically diagnosed. Once it completed, it performs the same functions as those of the manual diagnosis.

Chapter 6 : Diagnosing Guide

- The function of Diagnosing Guide is provided to reduce the amount of maintenance time, and have the maintenance technology generally applied, enabling you to check the information from the function of error code, sensor output and diagnosing guide.

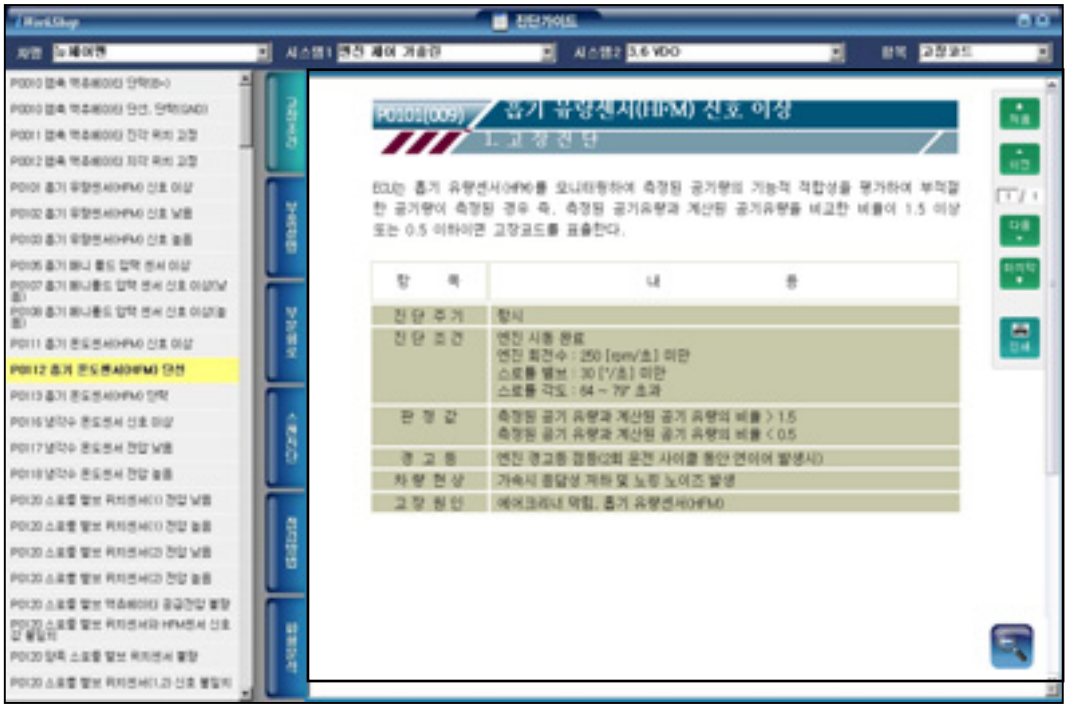


Figure 6.1 Diagnosing Guide-Error Status

1. Select the vehicle name.
   - Select the vehicle name that you would like to see the Help item.
2. Select System 1 (engine type).
   - Select the engine type according to the fuel type. (gasoline/diesel/LPG)
3. Seelct System 2 (engine displacement).
   - Since displayed by engine displacement, select that of your vehicle.
4. Select the item (error code/sensor).
5. Select the item that you would like to view.

- You can select the items such as error status, component description, partial circuit, scan diagnosis, diagnosing method, and waveform analysis.

Chapter 6 : Diagnosing Guide

- Function Summary by Items

1. Error Status: To check the diagnosis cycle, diagnosing status, decisive value, whether to turn on warning light, vehicle symptom and error cause.
2. Component Description: To check the mounting location of the error code and the sensor.
3. Partial Circuit: To check the error code and the circuit diagram of the sensor.
4. Scan Diagnosis: To view the diagnosis methods for the error code and sensor during the inspection of diagnosis module.
5. Checkup Method: To check the diagnosing methods for the error code and the sensor.
6. Wave form analysis: To verify the normal wave form of the error code and the sensor and diagnosing methods.

Chapter 7: Reprogramming

- This process functions to change or modify the ECU program in order to improve the vehicle performance or solve the problems.

Figure7.1 Reprogram

1. Select the vehicle to be reprogrammed.
2. The reprogram information is shown next to the vehicle selection screen, select the corresponding item.
3. The selected reprogram information is prompted in the program information screen.
4. After verying the ECU information in the ECU information window, and the reprogram version, click the Start Reprogram icon.
5. The progressive status bar is moving in the status window, indicating the progress of reprogramming.

Chapter 8 : Black Box

- Function to point to the sensors where you think there may be an error and save the data of corresponding items via driving test, and verify it.

Figure8.1 Blackbox_Setup

: Function to select the items of the vehicle and sensor that performs black box function and set them up.

: Function to retrieve the event item stored in the diagnosing module via the black box function

: Function to select the stored event item and verify it as the graph type data.

: To check the setting values that was previously defined.

: After selecting the vehicle and sensor list, click this button to have the setting values memorized.

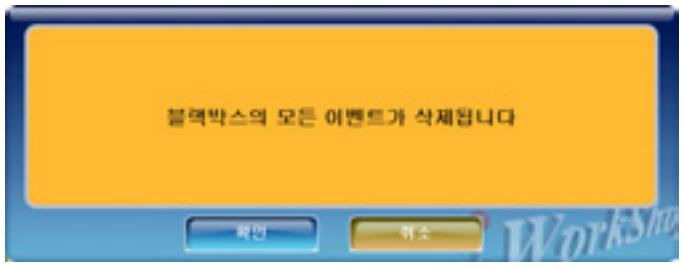
Chapter 8 : **Black box**

1. Setting (How to measure the use of black box switch)

1. Select the vehicle name that you want to use the black box function.
   - Select it form the vehicle list and click it.
2. Select the engine displacement.
   - The engine displacement list is shown in the engine displacement window.
3. The sensor list window is activated, select the sensor item to be measured.
   - In the vehicle ECU, the measurable sensor list will be displayed.
   - The selected list will be displayed in the right window.
4. Enter the customer information in the Customer Information section. (optional)
5. If you click the 설 정 button, you can have the setting values memorized in the

TIPS) If there is a previous setting value, a warning message is displayed.

r



6. The following message is displayed. If the PC and diagnosing module are connected with the USB cable, displace the USB from the diagnosing module.

7. Connect the black box switch to the diagnosing module.
8. After that, you can drive the vehicle, saving the data. The data are saved by triggering the event condition and black box switch.

TIPS) As for the date storing function, the date is saved for 10 seconds from the event occurring point or when to press the black box switch. It is possible to save the maximum amount of 1 Mbyte, and once the storing process is complete, the diagnosing module will restart.

9. If you use the USB cable to connect to your PC, reconnect the PC to the diagnosing module by the use of the USB cable.

10. You can verify the stored data by pressing the Retrieve or View Data button.

TIPS) Black box function can be saved 31 times up to maximum for the setting items. Also, whenever the saving is completed, the diagnosing module is reset so that the serial saving is not available. Please understand that.

TIPS) As for the black box function, vehicle status is automatically saved when vehicle meets the specific condition during the vehicle operation after connecting the vehicle with problems to the diagnosing module. For the black box storage condition, please refer to the Black box Event Storing Condition in 89 page.

Chapter 8 : **Black box**

* **Blackbox Event Storage Condition**

	Storing Condition	Storing Method	Symptoms found in the vehicle
1	When error code occurs	Storing 1Mbyte in total (Sensor, DTC data)	DTC ON
2	Maintain communication with 13V or less	Storing 1Mbyte in total (Sensor, power A/D data)	Engine stopped during the operation
3	Maintain the communication after 5 times of trials after communication stopped with 13V or lower.	Storing 1Mbyte in total (Sensor, power A/D data)	Engine starting failed due to the bad power terminal contact
4	Enter black box switch signal	Storing 1Mbyte in total (Sensor data)	
5	When the vehicle RPM drops down to 400 or lower during the monitoring of sensor data	Storing 1Mbyte in total (Sensor, RPM data)	Bad vehicle condition and engine starting is stopped
6	When the voltage drops down to 10V or lower, or the communication is discontinued	Storing 1Mbyte in total (Sensor, power A/D data)	Power shut down

2. Retrieve

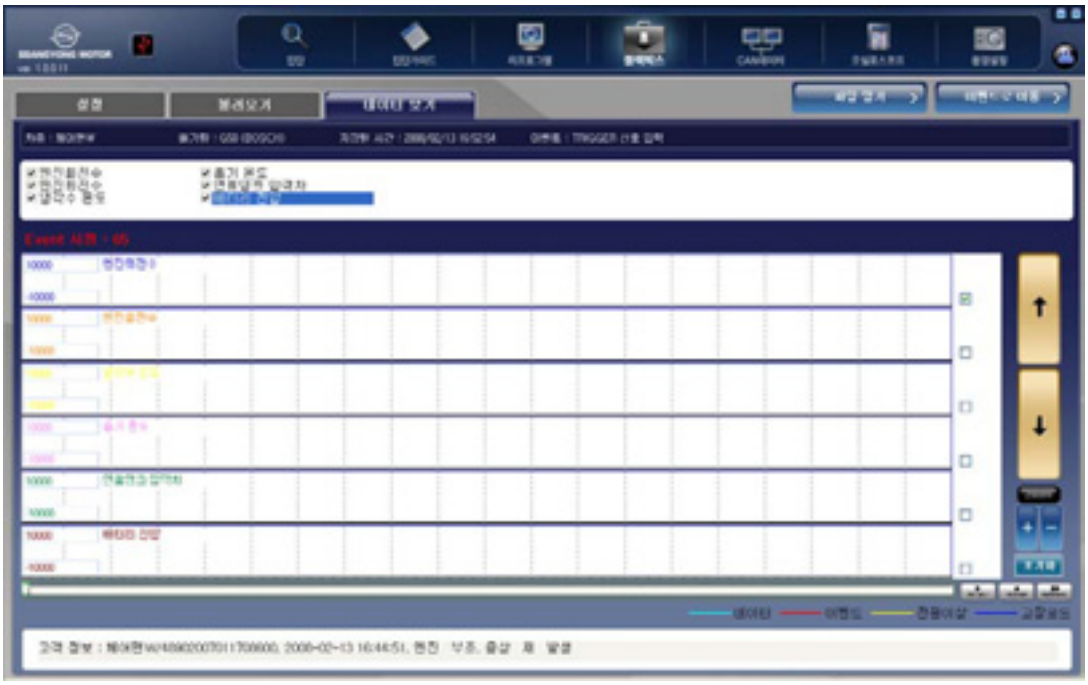
- To check the event items saved in the diagnosing module.
- To save the event stored in the diagnosing module in the user PC.

이벤트 삭제 > : To delete the event saved in the diagnosing module.

다른이름으로 저장> : To change the name of event saved in the diagnosis module, and save it in the PC

3. View Data

- You can check the saved sensor data items in the graph.



파일 열기 : To view the event items saved in the PC.

이벤트로 이동 : To view the event item list saved in the diagnosing module.

/ : When multiple items are saved, use these to move the service data items up and down.

zoom + − : To view the saved data graph in larger or smaller image.

PLAY STOP SPEED : To proceed or stop the saved data graph and to view them while swiftly searching them다.

Chapter 9: **CAN Data**

- Function to measure the vehicle's CAN LOW data by the use of DLC connector or CAN-specific connector (Chairman W) to check whether there is any error in the response and signal of individual modules.

Figure9.1 CAN Data

CAN 통신 : To diagnose the vehicle status through the CAN signal.

센서 데이터 : To check the system you can check out based on the CAN data.

1. Connect the DLC Connector W200 CAN adapter to the vehicle.
2. Select the vehicle type.
3. Select System 1.
4. Select System 2.
5. 시작 Start the examination by pressing the button (engine displacement)

.

Chapter 10: Oscilloscope

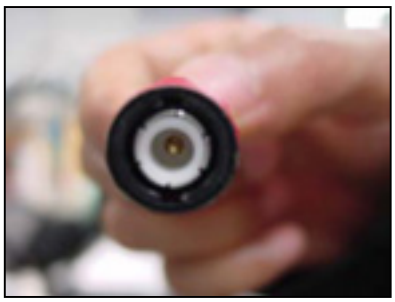
- To use the measuring functions of vehicle's individual sensors and ignition wave forms.
- To perform general multi-meter functions to measure voltage, frequency, duty, resistance, temperature, and pressure.
  To check whether any malfunction occurs in the actuator or software unit through the actuator operation.

1. Vehicle Connection

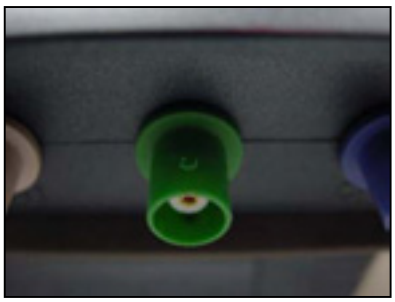
1. Connect DSM (measuring module) to the scope cable.

▶ Have the upper and lower groove on the scope cable well aligned with the projected area of the scope terminal, and then fix it by revolving.

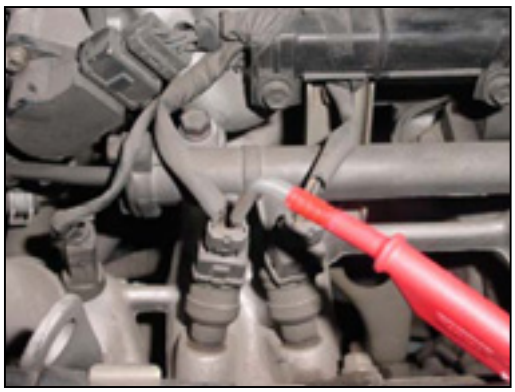
Scope Cable Terminal



Measuring Module Scope Terminal



2. Connect the probe to the signal line of the testing vehicle sensor, and have the tongs snapped into the (-) terminal of the battery.



Chapter 10: Oscilloscope

TIPS) Generally speaking, the vehicle sensor wiring comprises of power supply line, grounding wire, and signal line. And signal line is connected to the vehicle ECU, sending and receiving the signal. Oscilloscope-based test is to check the wave form using this signal line.

2. Scope (Automatic Measurement)

- Oscilloscope's automatic measurement function can be classified into for the gasoline vehicle and diesel vehicle, with group measurement and individual measurement. As for the automatic measurement function, the levels of voltage, time, trigger, and ground are set up fitted into individual sensors so that even the novice who firstly encounter the wave form can view the wave form without extra manipulation.

Figure10.1 Scope_Automatic Measurement

1. Select gasoline or diesel vehicle.
2. If you select Group Measurement or Individual Measurement, you will view the measurable sensor items in the right window.
3. Select the sensor to be measured.
   - You can choose 1 sensor at least or 4 sensors at maximum.
   - Next to CH1, CH2, CH3, and CH4, sensor items will be shown in the order of selection.
4. Click the View Wave Form icon.
5. The wave forms of the selected sensors are displayed in the screen.

3. Scope (Manual Measurement)

- You can set the voltage and time values at your convenience to measure the wave form.

Figure10.2 Scope_Manual Measurement

Display the scope channel.

Change measurement into AC or DC.

Reverse the wave form by selecting General/Reverse mode

Measurement Voltage Setting:
To set from 100mV ~ 50V by clicking the left and right arrows.

Measuring time setting:
To set from 25uS to 10S by clicking the left and right arrows.

TIPS) In the grid of the screen, horizontal axis indicates time, and vertical axis is voltage. Voltage and time setting can be interpreted to set the each scale of the grid.

Channel Setting:
Select the channel to which trigger setting is applied.

Select the standard wave form type to which trigger setting will be applied. (increase/decrease)

Select the mode to which the trigger will be applied.(automatic/normal/single)

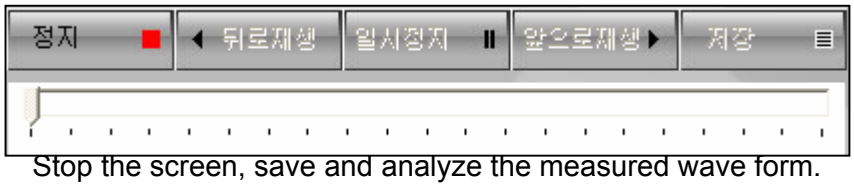
Select whether to activate the trigger mode.

TIPS) Trigger setting is a function to display the repetitive or occasional signals as the good-looking waves in the screen in terms of the setting channel, voltage level, and screen location.

TIPS) Trigger mode is not activated when the measuring time is configured more than 100mS.

Grid Setting Icon

- You can configure to show the grid from in the screen.
- N Grid: Default screen setting value to be measured.
- 2 Grid: Divide the measured screen into 4 divisions.
- 1 Grid: Divide the measured screen into 1 division.



: Save and Play Wave Form

Stop the screen, save and analyze the measured wave form.

- You can view the previously measured wave form based on the time point when to press the Stop button.
- It is possible to save it as the file by pressing the Save button

: Create the cross-shaped cursor on the screen, allowing the user to point to the desired wave from point and analyze voltage and time.

: You can have more detailed view of the Peek point.

4. Ignition Wave Form Measurement

- You can check whether there is any malfunction in the vehicle by measuring the ignition wave form.

1) Measuring Module Terminal Feature and Default Configurations

Figure10.3 Measuring Module Terminal Feature

It is listed in the order of **CH1, CH2, CH3, CH4** from the left as shown in Figure 10.3.

CH1 is the specific one for the resistance measurement.

- Resistance measurement is enabled only through CH1 in the multi-meter function.

CH 2 is the specific one for simulator output.

- Voltage output is available only through CH2.

CH 3 is the specific one for the trigger pickup.

- Trigger pick functions to distinguish the wave form 기통 by connecting to the number 1 cylinder

TIPS) Above characteristics are applied when specific functions are used. When using the scope function, any option selected from channel 1 to 4 enables you to measure the normal wave forms.

2) **Vehicle Connection (DLI ignition method)**

*** Ignition Pickup (1~1)**

- Connect the 1st ignition pickup linked to the measuring module scope terminal CH1to the high voltage cable of the cylinder to be measured. (used when measuring the single wave form)

*** Ignition Pickup (1~4)**

- Connect the 2nd ignition DLI pickup linked to the measuring module scope terminal CH1 to the high voltage cable of the cylinder that is number 1 and 3, or number 2 and 4 of the ignition coil. (used when measuring the single wave form)

[Number 1 and 3 High-voltage Cable of Figure 10.4]

- Connect the 2nd ignition DLI pickup linked to the measuring module scope terminal CH2 to the high voltage cable of the cylinder that is number 2 and 4, or number 1 and 3 of the ignition coil.

[Number 2 and 4 High-voltage Cable of Figure 10.4]

*** Trigger Pickup**

- To tell the cylinder size, connect to the number 1 cylinder high-voltage cable.

- If the number 1 cylinder in the vehicle to be measured is positive polarity, please connect it to the high voltage cable in the reverse direction of the spark plug.

[Number 1 High-voltage Cable of Figure 10.4]

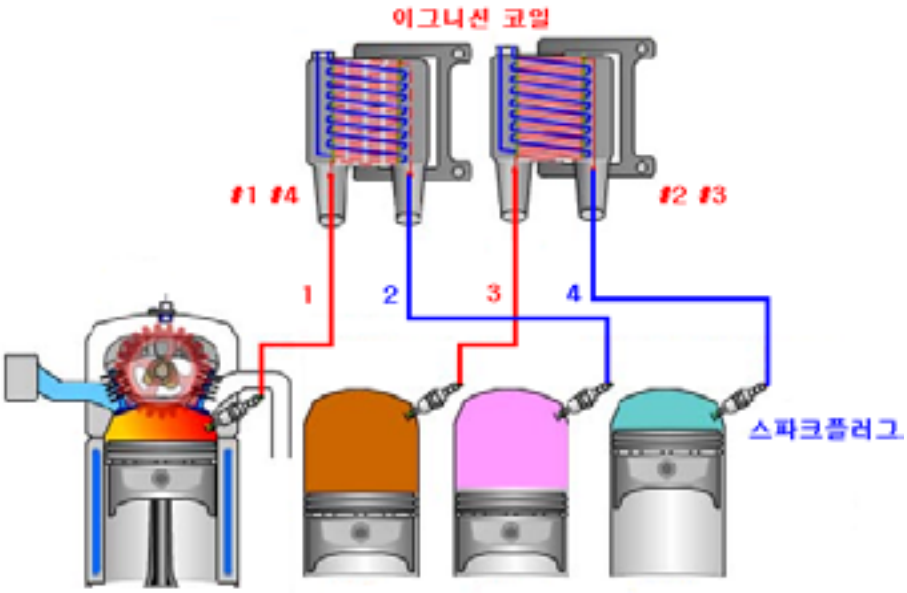


Figure10.4 DLI Type

3) Select Menu

- Once the connection to the vehicle and measuring module is complete, select the measurement menu from the program.

Figure10.5 Ignition Wave Form Measuring Menu

1. Select the cylinder size of the vehicle to be measured.
2. Select the probe type to be measured.
3. If you select the wave form icon, 2nd ignition wave form will be displayed.

4) Measurement Screen

- Screen where you can check the measurement results.

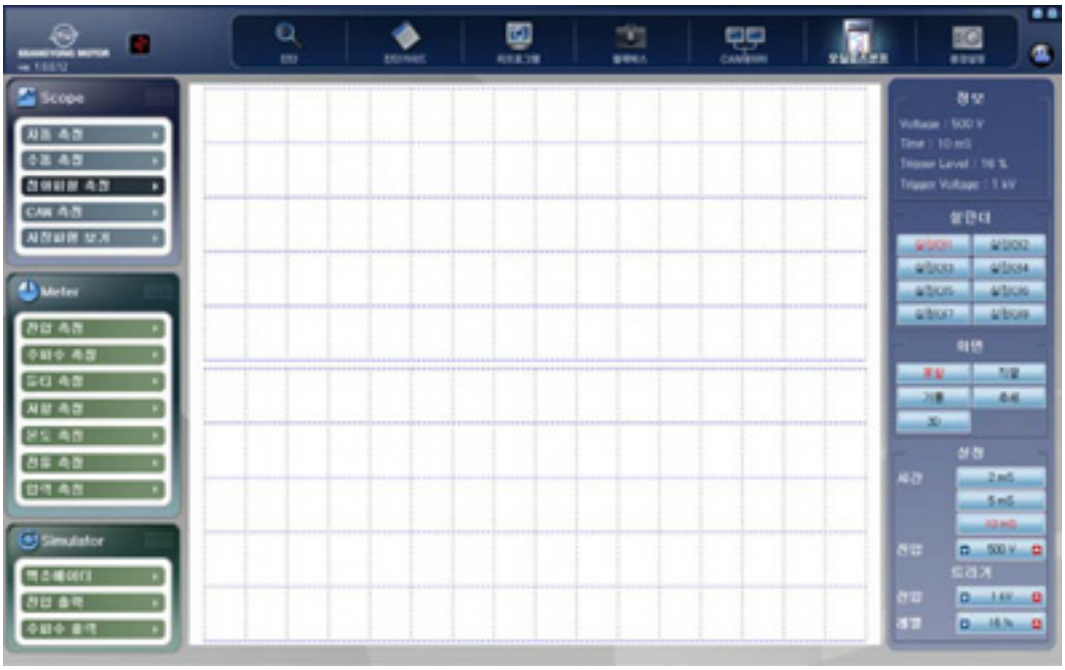


Figure10.6 Ignition Waveform Measurement Screen

: Window showing the predefined information.

: In the upper screen, the ignition waveform of the entire cylinder is displayed.

The selecting of the cylinder number, the ignition waveform of the selected cylinder will be displayed in the bottom of the screen.

Chapter 10 : Oscilloscope

: Setting window where you can change the screen mode.

분할

: Divides the screen into the upper and lower areas; the upper one displays the waveform of the entire cylinder, and the lower one shows the waveforms by cylinders.

직렬 : Displays the entire ignition waveforms in the entire screen.

기통 : Displays the waveform by cylinders.

추세 : Presents the ignition waveform trend graph.

3D : Presents the ignition waveforms in the 3-dimentional screen.

Allows to set the time axis.

Allows to set the voltage axis using the Right/left arrows (100V ~50Kv)

Allows to set the trigger voltage using The right/left arrows. (100V ~50Kv)

Allows to set the trigger level using the left/right arrows.

5. CAN Waveform Measurement

- You can measure the CAN waveform by connecting the scope cable to CAN connector that is equipped in the W200 vehicle.

1) How to Measure

1. Connect the W200 CAN adapter to the CAN diagnosing connector of the vehicle. Connect the measuring module and scope cable, and link the measurement point to the scope probe.
2. Enter into the oscilloscope mode.
3. Select the CAN measurement mode.

2) Menu Description

- Provides information about the CAN data measurement menu.

Figure10.8 CAN Measurement Menu

: Function to convert the waveform to the general mode or reverse mode by channels.

: Creates the cross-shaped cursor, allowing the user to point to the desired waveform point, and analyze the data.

: Function to stop the screen for the precise analysis of the waveform.

6. Meter Function

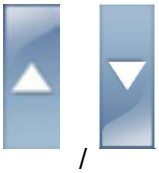
- You can realize the general multi-meter functions, and even in the condition without PC connection, you can independently implement the multi-meter functions by the measurement module.
- Additional pickup(option) is needed when measuring the temperature, pressure, current.

Figure10.9 Meter function voltage measurement

the minimum measurement value and maximum value.

: You can select the measurement channel.

: You can stop the measurement.


/ : You can view the different default values by the measurement items.

7. Simulator

- It provides a function to prepare operation condition randomly only for the actuators and sensors activated by frequency, duty, and voltage, and check whether it is operated or not.

1) Actuator

- You can adjust the frequency and duty to randomly operate actuators with earth control from ECU.

Figure10.10 Simulator_Actuator

1. Connect the vehicle and measuring module as shown in the right side of the screen.
2. Adjust the appropriate frequency and duty, and click the Start icon.
3. Verify whether the actuator is in action or not.

TIPS) When using the simulator function, be sure to connect the scope channel as directed by the screen. If the connection is not correctly connected, the function cannot be realized.

2) Voltage Output

- It allows you to measure the items controlled with voltage from ECU.

  Usage Example) 스로틀 position sensor, cooling water temperature sensor etc.

Figure10.11 Simulator_Voltage Output

1. Connect the vehicle and the measuring module as shown in the right side of the screen.
2. Adjust and set to the proper voltage, and click the Start icon.
3. Verify whether the vehicle status is changed or not.

When performing the simulation test, be sure to check the vehicle status and continue the process. Excessively intensive test may cause the damage in the equipment and the vehicle.

3) Frequency Output

- It allows you to measure the items controlled with frequency from ECU.

Usage example) crank angle sensor etc.

Figure10.12 Simulator_frequency output

1. Connect the vehicle and the measuring module as shown in the right side of the screen.
2. Adjust voltage and set to the proper voltage, and click the Start icon.
3. Verify whether the vehicle status is changed or not.

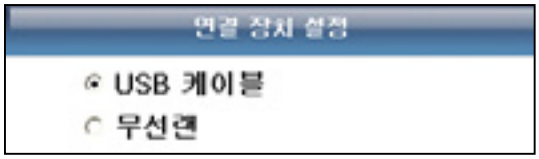
Chapter 11: Configuration

- Function to set the product usage configuration.

Figure10.13 Configuration

: To set the business information.

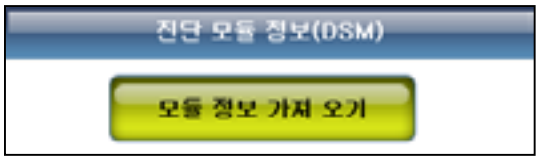
: To change the displayed language. (KOREAN / ENGLISH)



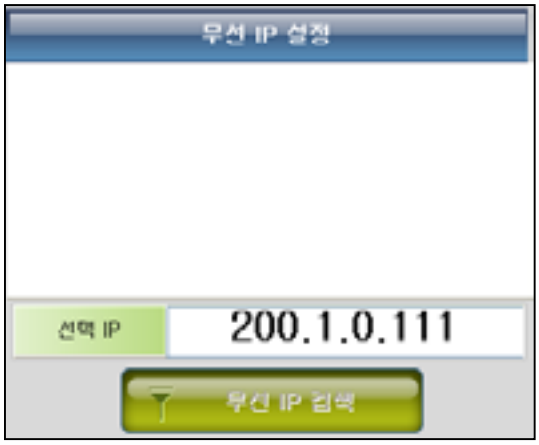
: To select the way of connecting to the diagnosis module.

TIPS) Measuring module is available only with the USB cable.

Chapter 11: Configuration



: When the diagnosis module is connected to the USB cable, you can verity the information of the diagnosis module.



: With Connection Device set to Wireless LAN, if you click Search Wireless, the searched IP address will be displayed.
If you select the IP of diagnosis module, the selected IP address will be displaced in the below window.
.

TIPS) For detailed description of the wireless setting, please refer to Chapter 2.

: Set the background color of the service data graph mode.

: Set the color of cursor line.

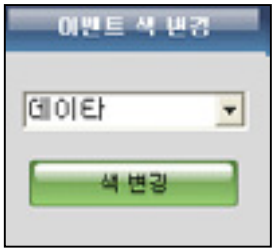
: Set the color of horizontal dotted line.

: Set the color of vertical dotted line.

TIPS) When viewing the service data of the vehicle diagnosis function with graph presentation, the increase in the item number can cause difficulty in analyzing the data due to the redundant background colors and line colors. In this case, you can change the color for your convenience.

TIPS) To exit from Configuration, be sure to click the Save icon and store the changed information.

: Configure the color by channels.



: You can change the event color in the black box function.

: It automatically changes the screen color into the predefined default value.

Quality Warranty

Quality Warranty Form

Product Name				
Model Name			Date of Manufacturing	
Warranty Period	Within a year from the purchase date		Date of Purchase	
Customer	Address		Telephone	
Sales Agent	Address		Telephone	

- Nextech's compensation criteria abides by the regulation of consumer loss compensation notified by MOSF.
- In no event, shall the Manufacturer be liable for any data loss arising out of the negligence of the user.
- If there have been any malfunctions occurring during the warranty period, repair services shall be given by the sales agent of the Company or the authorized service center.
- When you receive the repair service, be sure to present this warranty form.

Consumer Loss Compensation Criteria

1. Within the quality warranty period

Malfunction Type		Compensation Criteria
When malfunctions occur,		Repairing without charging
When requiring important repairing service (but, except for the case when the device normally functions, only with replacing one of components)	Within 10 days after purchase	Product exchange or full refund of purchase price.
	Within 1 month after purchase	Product exchange
	Within 1 month after exchanging	Full refund of purchase price
When unable to repair due to the absence of components	Product defect	Product exchange or full refund of purchase price
	Malfunction due to the consumer's intention and negligence	Product exchange after paying the actual service charge
Damage arisen during the transportation of the installation		Product exchange

- The compensation is limited to the defect in the performance and function occurred during the normal usage.

2. After Quality Warranty Period

Damage Type	Compensation Criteria
When malfunctions occur,	Charged Repair
When losing the repair requested product by the consumer	Refund the amount of straight line depreciation plus 10% (maximum amount: purchase price)
When failing to repair, due to the absence of the repair component within the component possession period.	

3. The following cases do not fall into the quality warranty conditions, requiring the charged repair service.

1) Defect arisen out of the random disassembly or manipulation or the negligence of use (immersion in water, destruction and damage)
2) Defect arisen out of the service done by unauthorized personnel, including the modification and manipulation of the product structure, performance, and function.
3) Defect due to the power abnormality
4) Defect due to the malfunction of contacting devices
5) When the lifespan of the component is expired: supplies (battery etc.)
6) Product defect or malfunction due to natural disasters
7) Matters related to the usage instructions, product cleansing, and reinstallation.
8) Defect arisen out of using the unauthorized supply items
9) When defect occurring by violating the "Caution" described in the User Guide.

Nextech
ENC Venture Dream Tower 3-cha, 13th FL
197-33 Guro-dong, Guro-gu, Seoul, Republic of Korea 152-050

Customer Service: 080-900-9333 http://www.nex-tek.com
1588-8642(A/S)

Information Communication Device Certification Information

- Model Name : DSM
- Device Name: Diagnosis System Module
- Business Name of the Certified: Nextech co., Ltd
- Manufacturer/Country: Nextech co., Ltd / Republic of Korea
- Certificate No. : NEX-SSYM—DSM(A)
- Date Certified: 2008

- Model Name : MSM
- Device Name: Measuring System Module
- Business Name of the Certified: Nextech co., Ltd
- Manufacturer/Country: Nextech co., Ltd / Republic of Korea
- Certificate No. : NEX-SSY-MSM(A)
- Date Certified: Feb., 26, 2008

Appendix B – Regulatory Compliance Information

Radio Frequency Interference Requirements
This device complies with Part 15 of FCC Rules and Canada RSS-210. Operation is subject to the following conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.
3. To comply with RF safety requirements, you must maintain a distance of 20 cm from the antenna when operating the device.
4. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

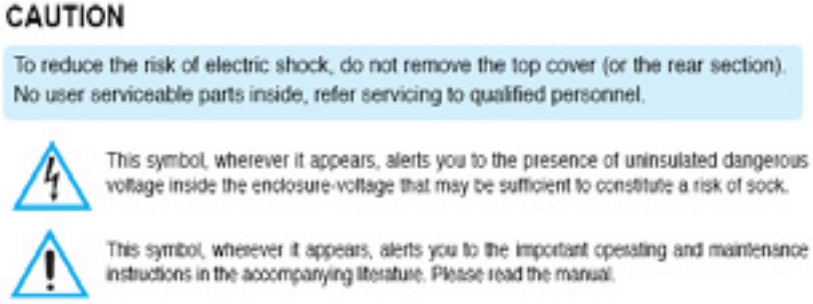
Interference Statement
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules; These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: To assure continued compliance, (example – use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

IMPORTANT NOTE:
FCC RF Radiation Exposure Statement:
This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

IMPORTANT Safety Instruction:



1) Read these instructions.
2) Keep these instructions.
3) Heed all warnings.
4) Follow all instructions.
5) Do not use this equipment near water.
6) Do not using near any heat sources such as radiators, heat resisters, stove, or other equipment that produce heat.
7) Internal Lithium coin batteries type:
- Rechargeable coin battery(BT2) SANYO ENERGY, ML 2430
- RTC(Real Time Clock) coin battery(BT1) FDK Energy Co., Ltd., CR 2032

CAUTION
RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS

European Union Regulatory Notice

Compliance with these directives implies conformity to harmonized European standards (European Norms) that are listed in the EU Declaration of Conformity issued by HP for this product or product family. This compliance is indicated by the following conformity marking placed on the product.

The wireless telecommunications functionality of this product may be used in the following EU and EFTA countries:
Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, and United Kingdom.

Products with 2.4-GHz wireless LAN devices France
For 2.4 GHz Wireless LAN operation of this product certain restrictions apply:
This product may be used indoor for the entire 2400-2483.5 MHz frequency band (channels 1-13). For outdoor use, only 2400-2454 MHz frequency band (channels 1-9) may be used. For the latest requirements, see http://www.art-telecom.fr.

Italy :
License required for use. Verify with your dealer or directly withthe General Direction for Frequency Planning and Management (Direzione Generale Pianificazione e Gestione Frequenze).

CE RF Radiation Exposure Statement:

Caution This equipment complies with European RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

CE

Type of equipment:	Automotive Scanner
Brand Name /Trade Mark:	Diagnostic System Module
Type designation /model:	DSM
Manufacturer:	Nextech Co., Ltd.

In accordance with the following Directives:

Directive 1999/5/EC	Radio Equipment and Telecommunications Terminal Equipment and the mutual recognition of their conformity

Including amendments by the CE Marking Directive 1999/5/EC

The following harmonized European standards or technical specifications have been applied:

Art.3.1.a)	EN 60950-1: 2001 + A11:2004 EN 50371 (2002)
Art.3.1.b)	ETSI EN 301 489-1 V1.6.1 (2005-09) ETSI EN 301 489-17 V1.2.1 (2002-04)
Art.3.2)	ETSI EN 300 328 V1.7.1 (2006-10)

Test report issued by:

RF: CTK Co., Ltd.
LVD: CTK Co., Ltd.
EMC: CTK Co., Ltd.

The CE Marking on the products and/or their packaging signifies that Nextech Co., Ltd. hold the reference technical file available to the European Union authorities.

Place and date of issue: E&C Venture Dream Tower the 3rd ,13th Floor, 197-33, Guro-Dong, Guro-Gu, Seoul, Korea / SEPTEMBER 02, 2008

[Place, date]

EU
SEPTEMBER 02, 2008

[Name and signature of person responsible]

권 영 학

Young-Hak Kwon / assistant manager