

Introduction





Read me first



Introduction

Thank you for purchasing KDS.
Read the instructions thoroughly for proper operation of your KDS.

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Disclaimer

Global Diagnostic System specifications and manual are subject to change without notice. Global Information technology Co., Ltd. assumes no liability for damage incurred directly or indirectly from error, omission or discrepancies between the tablet , VCI, VCI II, VMI, TPMS, TPMS B/T, Trigger Module and the User's Manual.



Safety Warnings and Cautions before Use



Before Use

- ☞ Read the instructions thoroughly for proper operation of your KDS.
- ☞ This manual contains useful information needed for using KDS.
- ☞ The contents of manual are subjected to be changed, added or removed without prior notice.
- ☞ GIT assumes no liability for the applications which are not produced by GIT.
- ☞ KDS application includes several functions for uploading and downloading data. GIT assumes no liability for the fee due to the use of data

Instructional icons

Refer to the Instructional Icons used in this manual below.

<i>Warning</i>		Situations that could cause injury to yourself or others
<i>Caution</i>		Situations that could cause damage to your device or other equipment
<i>Notice</i>		Notes, usage tips, or additional information

Safety Warnings and Cautions before Use

This section contains **WARNINGS** and **CAUTIONS** for safe usage of KDS. Before use, the user should read the following information.



Warning

☞ **This indicates incorrect handling may result in a major accident involving death or serious injury.**

The VCI/VCI II should be secured in a safe location when operating the vehicle to avoid interference with other vehicle equipment.

Only use the specified adapters and cables when connecting the VCI/VCI II module. (7~35VDC)

Ensure all cables are properly connected during operation. Do not disconnect communication cable or power cables unless finished with the equipment. When using the trigger module, ensure that the module is installed in a safe and secure location to avoid interference with other vehicle equipment.

Do not disassemble the VCI/VCI II module.
Use only genuine accessory parts supplied by GIT.

Never connect the device to equipment other than vehicles.
Products are to be stored within the right temperatures. (Refer to Feature of products)
This equipment was restricted to indoor use.

Using KDS at the excessive shielding space can cause wireless communication disruption. Wireless communication can be disrupted, temporary or continuously, depending on the wireless communication environment.

VCI II is the short-range wireless device. Thus, it can be limited in the long distance communication. (Able to communicate within 10M without any obstacle)

This section includes warnings and noticing sentences which user should read and be familiar with them before using the TPMS, TPMS B/T module.



Warning

☞ This indicates incorrect handling may result in a major accident involving death or serious injury.

- ☞ All cables for TPMS, TPMS B/T function should be connected correctly. During working functions, any cable should not be disconnected.
- ☞ When CABLE-BATTERY (P/No: GSTA-37210A) is connected to the vehicle battery, check if the polarity of battery terminal is correctly connected.
- ☞ Do not disassemble the TPMS, TPMS B/T module. For maintenance, follow the instructions describing in the manual.
- ☞ When updating the TPMS module, connect the external power supply (AC/DC adapter) to supply the stable power.
- ☞ When using the AC/DC adaptor as the external power supply, adapter satisfying the specification regulated by GIT should be used.
- ☞ The accessory parts relating to the TPMS, TPMS B/T should be authorized product by supplied by GIT.
- ☞ Use this equipment under the properly regulated temperature condition (Refer to specification)
- ☞ The equipment should be stored under the properly regulated temperature condition. (Refer to specification)
- ☞ This equipment should be only used for purpose regulated by GIT.
- ☞ You should be familiar with the manual enough before using this equipment.
- ☞ For the damages caused by user's carelessness and by that user does not comply with the cautions and warnings, it is reliable to user.
- ☞ The GIT product should be diagnosed or repaired by service manpower authorized by GIT.
- ☞ When replacing the rechargeable battery, you should read the manual and be familiar with the instructions.
- ☞ Use the only rechargeable battery supplied from the GIT.
- ☞ Do not disconnect the rechargeable battery arbitrarily.
- ☞ Do not sink the rechargeable battery into the water or wet it.

- ☞ Do not impact the rechargeable battery and prick it with sharp object.
- ☞ Do not put it the rechargeable battery into microwave oven or high pressured container.
- ☞ Do not apply physical impact to the rechargeable battery.
- ☞ If any abnormal phenomena such as odor, heat, deformation or discoloration are appeared, do not use the rechargeable battery.
- ☞ Do not change the polarity of terminals.
- ☞ GIT is not responsible for any product except ones supplied from GIT.
- ☞ Do not directly connect the rechargeable battery to the external power supply.
- ☞ Do not leave the rechargeable battery near the fire.
- ☞ Be careful that the anode (+) and cathode (-) terminals of the rechargeable battery are not shorted.
- ☞ The rechargeable battery is a consumable product so that it is not included into the warranty range of main product.
- ☞ For the warranty for the rechargeable battery and other expendables, please refer to the warranty for expenditures and accessories of the warranty.
- ☞ If the rechargeable battery is damaged or deformed by user's carelessness, it cannot be repaired at free of charge.
- ☞ The life-time of rechargeable battery is different according to the using environment
- ☞ Be careful that do not drop down the equipment.
- ☞ Do not put any goods on the TPMS, TPMS B/T equipment.
- ☞ When connecting to the external power supply from the battery in the engine room, be careful that the connection cables do get not damaged by the heat from the engine room or driving part.
- ☞ When connecting the external power supply, check if the polarity is correct.
- ☞ All components should be restored in the appointed position when they are not using.
- ☞ Do not use the cable connected to the equipment as a handle.
- ☞ Do not store under the following environment.
 - High temperature or low temperature (refer to the specification)
 - High humidity or low humidity (refer to the specification)
 - Under the direct sunlight

- ☞ Do not put any heavy object on the equipment.
- ☞ During delivering product, do not apply any impact or shake it.
- ☞ Be careful that the main body and accessories of TPMS, TPMS B/T module do not contaminated by paint, chemical pigment, or acid material. It may cause corrosion of product.
- ☞ Do not expose the product to the X-ray or Microwave. It may cause serious damages on the product.
- ☞ Do not store the battery at the hot place. It may reduce the battery lifetime.
- ☞ When storing the TPMS, TPMS B/T equipped with battery for a long time (3 months or more), comply with the storing instruction (temperature: $23\pm 5^{\circ}\text{C}$, humidity: $65\pm 20\%RH$).
- ☞ If liquid of the battery gets into your eyes, do not rub your eyes but clean with flowing water and then contact doctor.



Caution

- ☞ **This indicates incorrect handling may lead to injury or damage to property. Under certain conditions more serious consequences may result.**

This section includes noticing sentences which user should read and be familiar with them before using the VCI/VCI II module.

- ☞ Do not remove the rubber shield from the VCI. Keep liquids and other contaminants away from the VCI/VCI II.
- ☞ Do not drop the VCI/VCI II.
- ☞ Do not place any objects (tools, manuals, etc.) on the VCI/VCI II.
- ☞ Observe correct polarity when connecting the battery extension cable.
- ☞ When connecting cables under the hood, secure the cables to avoid damage caused by hot or moving parts. Unplugging the DLC and USB cables from the VCI module must only be done after releasing the cable connector lock tap(s).
- ☞ Properly store all components when not in use.
- ☞ Do not hold or pull the cables when carrying the product.
- ☞ Do not store products in places ;
 - where the temperature is extremely high or low (Refer to feature of products).
 - where the humidity is extremely high or low (Refer to feature of products).
 - where they are exposed to prolonged direct sunlight.
- ☞ Do not store products inside a vehicle during summer season for a long time
- ☞ Avoid a shock or vibrations.
- ☞ Do not place under heavy weight.
- ☞ Avoid a shock or vibrations during shifting.
- ☞ Keep products away and store from moisture and store in dry places.
- ☞ GIT is not responsible for the damages that are caused by PCs, which are not recommended by GIT.
- ☞ Keep products away from flammable substances or places where strong static electricity can occur.
- ☞ Products and accessories are not to be coated or painted with chemical substances or acid that can corrode the equipment.
- ☞ Do not expose the equipment to X-ray or Microwave. This might cause severe damage to the equipment.
- ☞ VCI/VCI II is not a water proof device. Thus, keep VCI/VCI II away from liquids or other contaminants.

KDS operation is based on Android OS. So a couple of functions are available at KDS.(for example, gesture, pinching, dragging, etc).

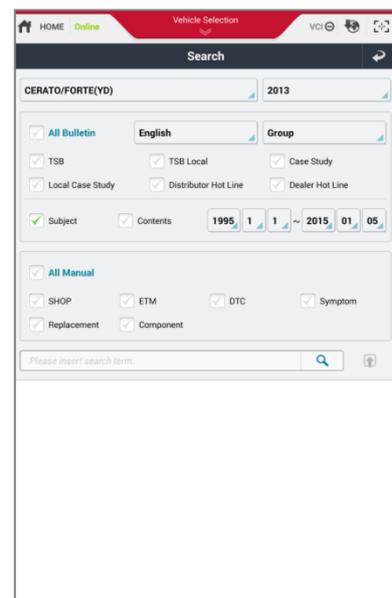
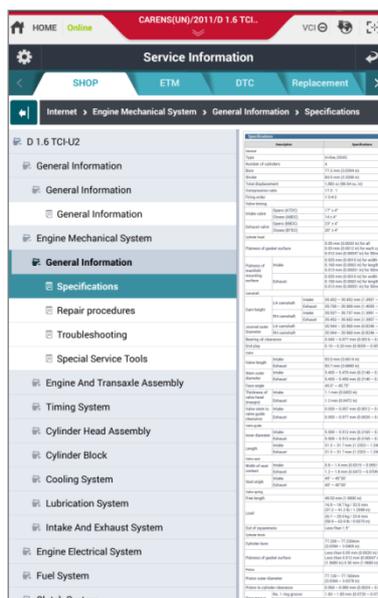
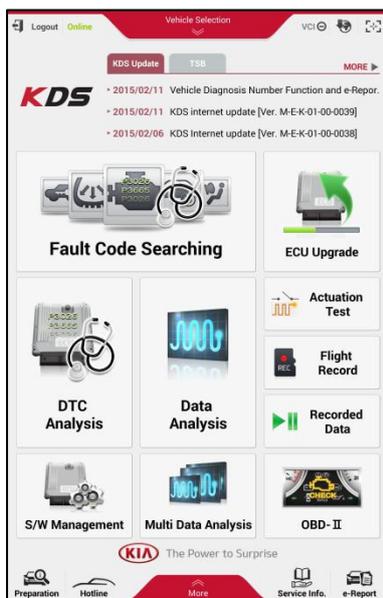
Section Operation

KDS consists of three sections. These three sections include all the functions for the vehicle diagnosis. By changing the function screen according to each function, the vehicle diagnosis can be performed.

First Section is the basic section which is also the diagnosis section that is shown as the main screen when the program is launched.

Second section shows how the vehicle maintenance manual will appear when the screen is switched through the gesture to left on the main screen. Shop Information (SI) shows the information stored on the server if the internet is connected. Otherwise, the information of Micro SD Card mounted in the tablet will be shown. The user can set the information display mode in configuration.

Third section is the session that has search function, which will appear when the screen is switched through the gesture to right on the main screen. Main search object can be selected by the search result according to the search condition in the TSB or manual data of the information stored in server

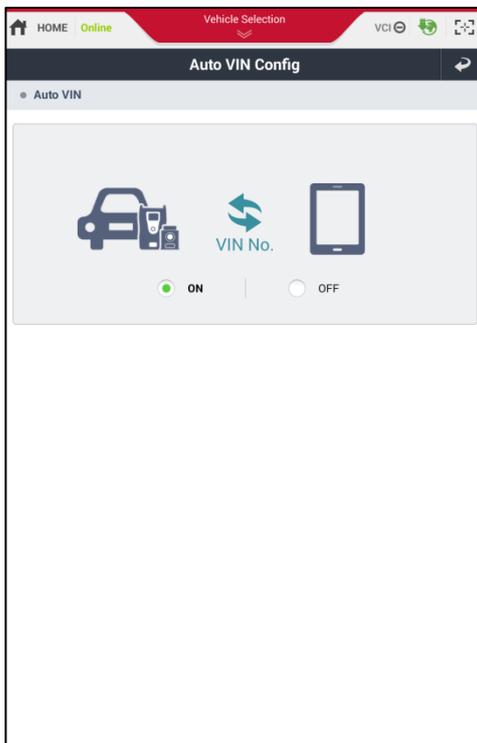


Auto VIN

This function indicates VIN(Vehicle identification number) data automatically when Auto VIN Config is ON before the function is performed. It is useful only when the vehicle has VIN, the VCI/VCI II is connected to the vehicle and key is on.

This function stores VIN from the vehicle without reference to the user's selection. The information will be transmitted to the tablet in accordance with configuration. Based on this data, the vehicle production information will be searched and analyzed in the server.

The advantage of this function is that it can provide the user with the convenience for understanding the vehicle status and the system condition in a short time by displaying specified information about the systems installed in the vehicle.



Vehicle Selection

There are three ways to select the vehicle.

1. Auto VIN

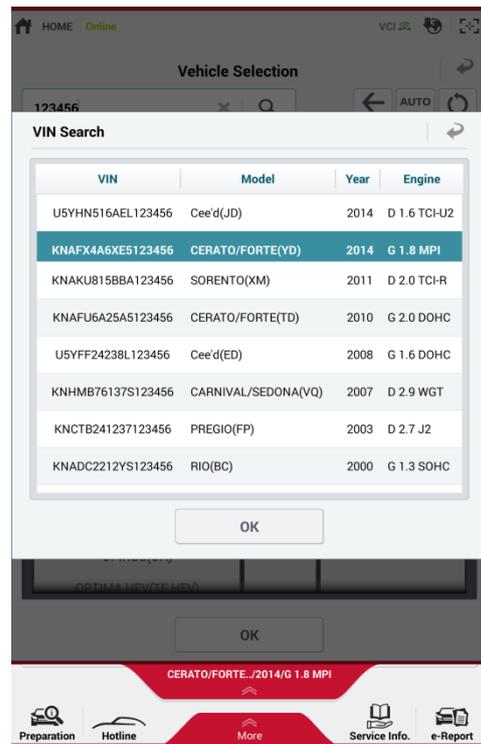
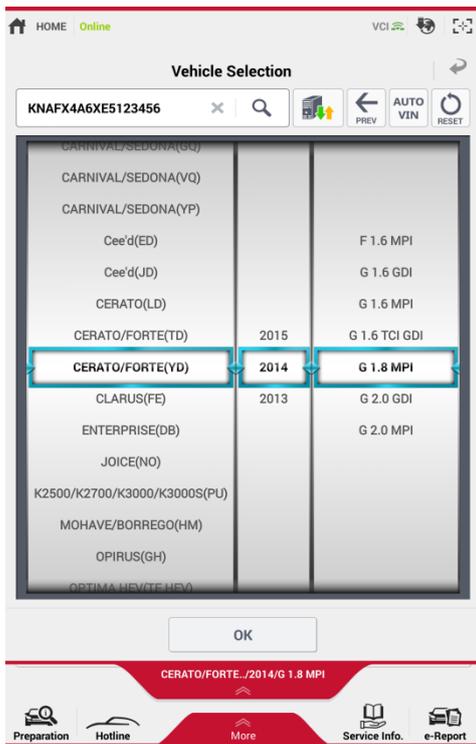
This function is to read VIN automatically from the vehicle.
If the vehicle does not have VIN, this function is not working.

2. Search VIN

The user can search VIN from the internet server by entering the last 6-digit of VIN.
This function is useful only the internet is available. If the internet environment is inferior or impossible, please enter the full VIN(17-digit.)

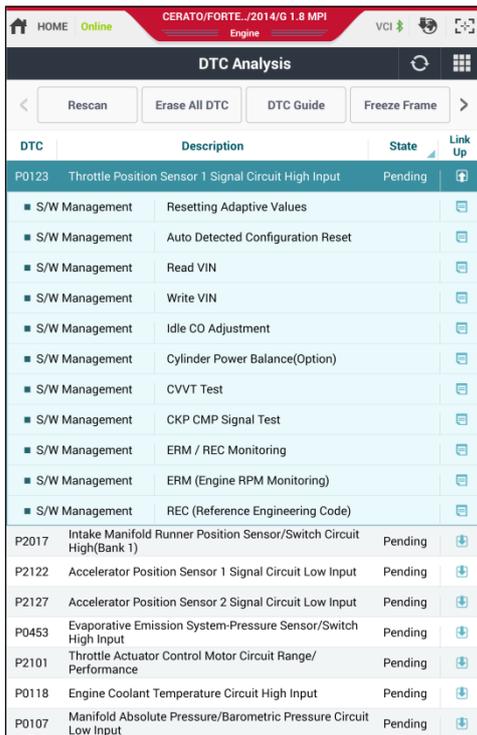
3. Manual Selection(User's Selection)

In cases that any of above methods is not available, the user may select the vehicle manually in the order of Model, Year and Engine.

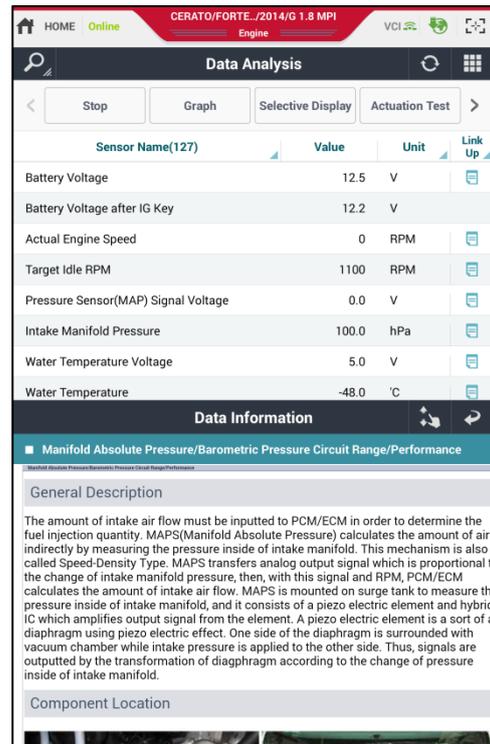


Link-Up function

During the course of using basic diagnosis function (DTC analysis, Data analysis), a series of combined data is supported. At DTC analysis function, the user can check the function list of vehicle software management. The suggested function is related to the DTC and the problem may be solved after performing that function. And in case of Data analysis, it shows the information supported about the selected data and actuation test list that is related to the data. The user can see whether the supported item exists or not through the icon in the right



DTC	Description	State	Link Up
P0123	Throttle Position Sensor 1 Signal Circuit High Input	Pending	🔗
■ S/W Management	Resetting Adaptive Values		🔗
■ S/W Management	Auto Detected Configuration Reset		🔗
■ S/W Management	Read VIN		🔗
■ S/W Management	Write VIN		🔗
■ S/W Management	Idle CO Adjustment		🔗
■ S/W Management	Cylinder Power Balance(Optional)		🔗
■ S/W Management	CVVT Test		🔗
■ S/W Management	CKP CMP Signal Test		🔗
■ S/W Management	ERM / REC Monitoring		🔗
■ S/W Management	ERM (Engine RPM Monitoring)		🔗
■ S/W Management	REC (Reference Engineering Code)		🔗
P2017	Intake Manifold Runner Position Sensor/Switch Circuit High(Bank 1)	Pending	🔗
P2122	Accelerator Position Sensor 1 Signal Circuit Low Input	Pending	🔗
P2127	Accelerator Position Sensor 2 Signal Circuit Low Input	Pending	🔗
P0453	Evaporative Emission System-Pressure Sensor/Switch High Input	Pending	🔗
P2101	Throttle Actuator Control Motor Circuit Range/Performance	Pending	🔗
P0118	Engine Coolant Temperature Circuit High Input	Pending	🔗
P0107	Manifold Absolute Pressure/Barometric Pressure Circuit Low Input	Pending	🔗



Sensor Name(127)	Value	Unit	Link Up
Battery Voltage	12.5	V	🔗
Battery Voltage after IG Key	12.2	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	🔗

Data Information	
■ Manifold Absolute Pressure/Barometric Pressure Circuit Range/Performance	
General Description	
<p>The amount of intake air flow must be inputted to PCM/ECM in order to determine the fuel injection quantity. MAPS(Manifold Absolute Pressure) calculates the amount of air indirectly by measuring the pressure inside of intake manifold. This mechanism is also called Speed-Density Type. MAPS transfers analog output signal which is proportional to the change of intake manifold pressure, then, with this signal and RPM, PCM/ECM calculates the amount of intake air flow. MAPS is mounted on surge tank to measure the pressure inside of intake manifold, and it consists of a piezo electric element and hybrid IC which amplifies output signal from the element. A piezo electric element is a sort of diaphragm using piezo electric effect. One side of the diaphragm is surrounded with vacuum chamber while intake pressure is applied to the other side. Thus, signals are outputted by the transformation of diaphragm according to the change of pressure inside of intake manifold.</p>	
Component Location	

Graph Mode at Data Analysis

The number of fixed items in graph mode at Data Analysis is unlimited, and the maximum number of items displayed on screen is twenty. In case many items are displayed at the same time, the refresh speed of graph will get slower. However, the data of the chosen items can be stored normally although it is slower. Additionally on the graph screen, through gesture, the interval of horizontal axis and vertical axis can be changed.

Item Name	Current Value	Range	Graph Icon	Close Icon
Battery Voltage after IG Key	16.0	0.0 - 17.4	Graph	Close
Target Idle RPM	2550	0 - 1250	Graph	Close
Water Temperature Voltage	6.0	0.0 - 5.0	Graph	Close
Intake Air Temperature	143.2	-48.0 - -39.8	Graph	Close
O2 Sensor Binary Type Bank1 Downstream(Optional)	1.1	-0.2 - 0.4	Graph	Close
Vehicle Speed	200.0	0.0 - 0.0	Graph	Close
Relative Charge Value	100.0	0.0 - 0.0	Graph	Close
Injection Time - Inj. 1	100.8	0.0 - 109.8	Graph	Close
Injection Time - Inj. 4	100.8	0.0 - 109.8	Graph	Close
Immobilizer Built-in		YES	Graph	Close
Ignition Switch		ON	Graph	Close
Malfunction Indicator Lamp(MIL)		ON	Graph	Close
Injection Time - Inj. 3	100.8	0.0 - 109.8	Graph	Close
Fuel Pump ON		OFF	Graph	Close
Injection Time - Inj. 2	100.8	0.0 - 109.8	Graph	Close
O2 Sensor Binary Type Bank1 Upstream(Optional)	1.1	-0.2 - -0.2	Graph	Close
Intake Air Temperature Voltage	6.0	0.0 - 5.0	Graph	Close
O2 Sensor Linear Type Bank1 Upstream(Optional)	5.0	0.0 - 2.0	Graph	Close
Main Relay ON		ON	Graph	Close
Brake Test Switch		ON	Graph	Close

Multi Data Analysis

This is the function that helps the user check the data of more than two control units simultaneously. The supported protocol of system is CAN only protocol system. In this analysis function, the user can check the sensor data of various control units or the data of the sensor items while running the actuation test.

The number of control units can be limited based on the vehicle condition. Multi Data Analysis is useful when the user diagnoses Hybrid vehicles or BCM.

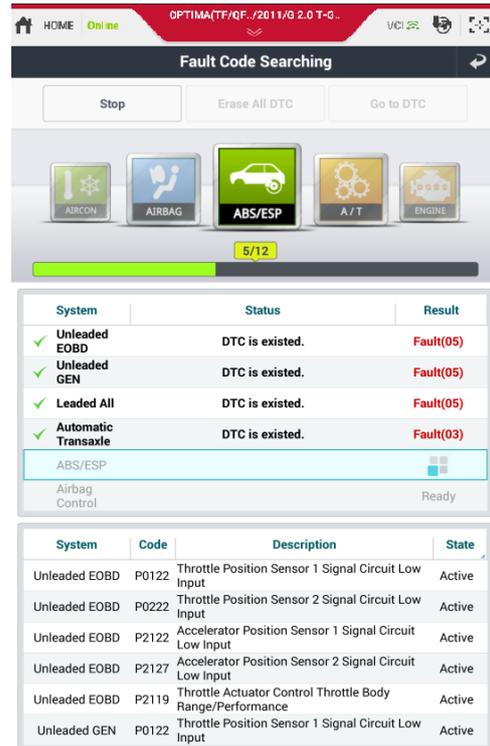
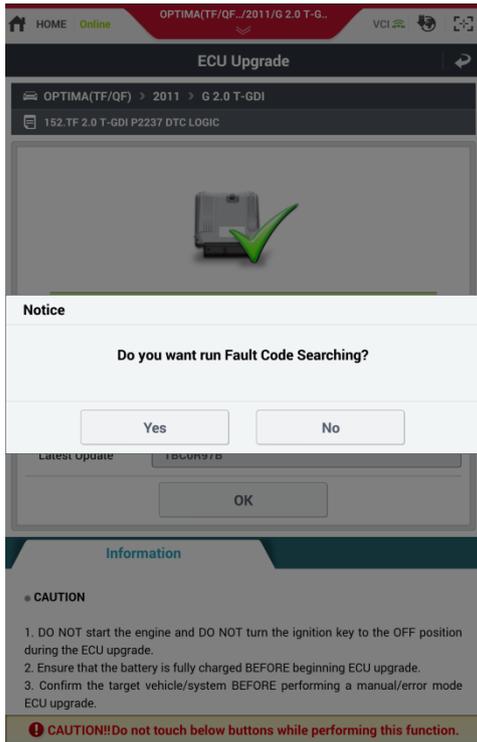
The screenshot shows a mobile application interface for 'Multi Data Analysis'. At the top, there is a status bar with 'HOME Online' and 'OPTIMA(TF)/2012/G 2.4 DOH..'. Below the title bar, there are control buttons: 'Stop', 'Text', 'Item Selection', and 'Reset Min.Max'. The main area displays a list of 20 parameters, each with a current value, a range, and a delete icon (X).

Parameter Name	Current Value	Range	Action
Unleaded EOBD - O2 Sensor Linear Type Bank1 Upstream(Optional)	5.0	0.0 - 2.0	X
Unleaded EOBD - Vehicle Speed	200.0	0.0 - 0.0	X
Unleaded EOBD - O2 Sensor Binary Type Bank1 Downstream(Optional)	1.1	-0.2 - 0.4	X
Unleaded EOBD - Intake Manifold Pressure	1200.0	0.0 - 100.0	X
Unleaded EOBD - Water Temperature	143.2	-48.0 - -39.8	X
Unleaded EOBD - Relative Charge Value	100.0	0.0 - 0.0	X
Unleaded EOBD - Injection Time - Inj_1	100.8	0.0 - 109.8	X
Automatic Transaxle - Output Speed(PG-B)	8000	0 - 0	X
Automatic Transaxle - Next Gear Position	6	0 - 4	X
Automatic Transaxle - Engine RPM	8000	0 - 0	X
Automatic Transaxle - Gear Ratio	5.000	0.000 - 1.386	X
Automatic Transaxle - Shift Control Solenoid Valve B(2-5/B)	1275	0 - 0	X
Automatic Transaxle - Shift Control Solenoid Valve D(OD/C)	1275	0 - 0	X
Automatic Transaxle - Shift Control Solenoid Valve E(SS-A)		OFF	X
Automatic Transaxle - Shift Control Solenoid Valve C(35R/C)	1275	0 - 0	X
Automatic Transaxle - Oil Temperature Sensor	215	-40 - -40	X
Automatic Transaxle - Shift Control Solenoid Valve A(UD/B)	1275	0 - 0	X
Automatic Transaxle - Pressure Control Solenoid Valve(VFS) *A*	1275	0 - 0	X
Automatic Transaxle - Torque Converter Clutch Control State		OFF	X
Automatic Transaxle - Vehicle Speed	255	0 - 0	X

ECU Upgrade

After performing the ECU Upgrade, Fault Code may occur due to the error between the systems.

To reduce this, FCS(Fault Code Searching) will be performed just after completing ECU upgrade which may give the user more convenience and save time.

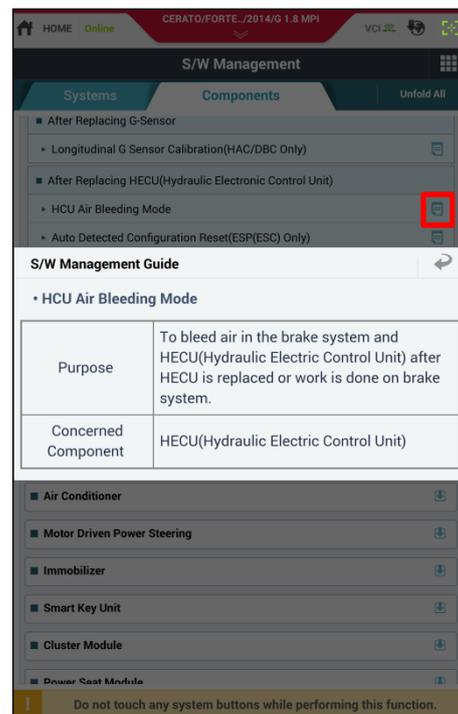


S/W Management

When the user perform vehicle selection with VIN information, KDS enables the user to perform this function easily by analyzing the system applied to the vehicle with the data of vehicle production information and displaying all the functions listed about the selected system.

While performing the other basic function, the user can execute the function by clicking the Quick Menu. Only the function list of selected systems will be displayed after diagnosing the systems.

When the user clicks the  button which is located on the right side of each function, S/W Management Guide will be shown at the screen. It gives the user the information to understand the function and predict the outcome.



Limitation of Off-Line Data

The basic operation environment of KDS is based on online environment. This function supports the user by showing TSB and bulletin data from the information server without storing the data in the tablet PC. And this makes the security stronger.

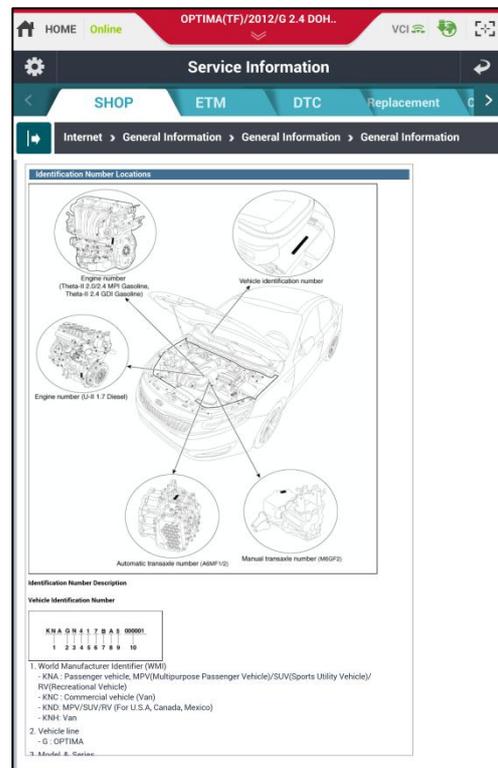
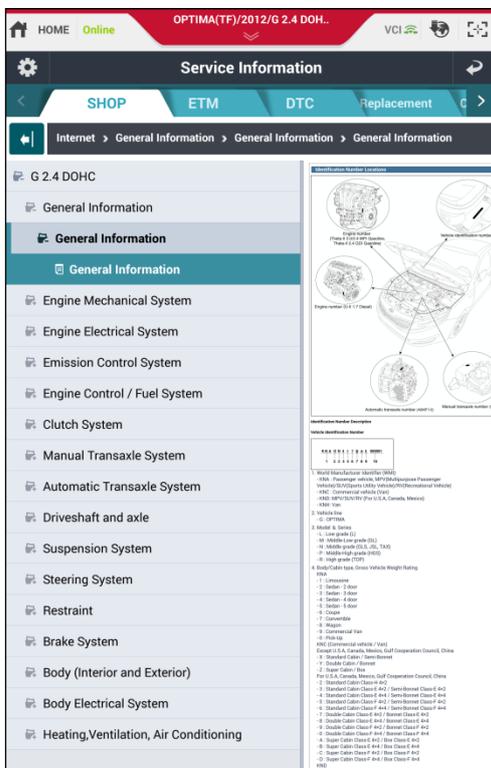
Service Information

The goal of KDS is to provide the user with the best and the newest Service Information for repairing a problematic vehicle.

The user can check Service Information at any place where the internet is available.

As for the areas where the internet environment is inferior or impossible, the Service Information is provided through Micro SD Card.

The user can install Service Information on Micro SD Card via PC Manager. The latest data will be provided through internet update or Update DVD.



PC Manager

This is the utility program that is required to set up the program and register in the tablet at the beginning. Its main function includes managing the stored data and carrying out internet update besides setting up and diagnosis recovery function.

