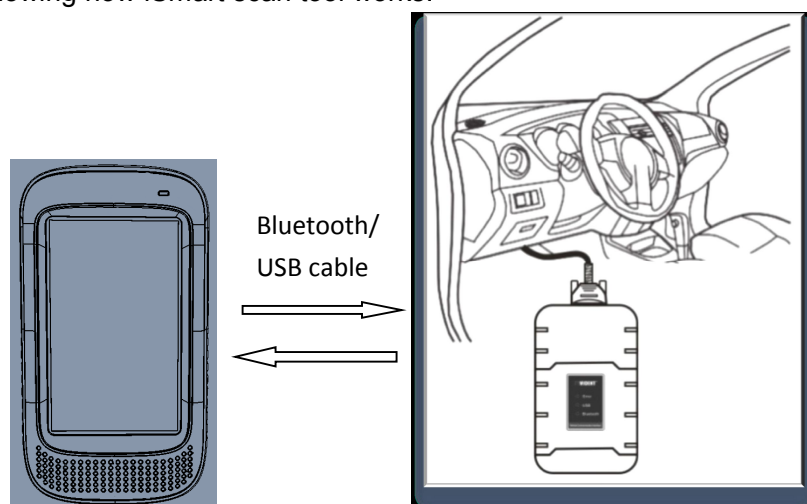# iSmart User Manual

1 Introduction

1.1 Product Profile

Through simple Bluetooth communication between VCI connector and iSmart handset, this Android based diagnostic system provides professional diagnosis on more than 100 American, Asian and European vehicle makes. It has access to a vast range of controllers (ABS, airbags, instrument cluster, etc.), live sensor data, and system/component-level bi-directional controls to get the job done faster and with a greater degree of accuracy and prevent dreaded "comeback". In addition, it has access to the most commonly required service and programming functionality.

Below is a diagram showing how iSmart scan tool works.

Bluetooth/
USB cable

1.2 Product Features

• Full diagnostic functionality – Complete capabilities for codes, live data, freeze frame, functional tests, ECU information, adaptation, matching, and coding for dozens of vehicle systems

• Automatic VIN identification – automatically identify the VIN for fast diagnose.

• System Detection – detects only the systems that are specific to your vehicle and reads for errors, meaning you haven't got to spend time looking through data that might not be relevant

• One-Touch Full Vehicle Code Scan & Clear —quickly checks and clears codes for all available modules on the vehicle

• Record / Playback/Print live data

• Study and compare mode of Live data — real-time data can be compared against known good measurements

• Service functionalities —Direct Access to the most common required special functionalities such as oil service, EPB, ABS&SRS, BCM/SIR setting, DPF regeneration, throttle body alignment, steering angle sensor calibration, battery configuration, etc.

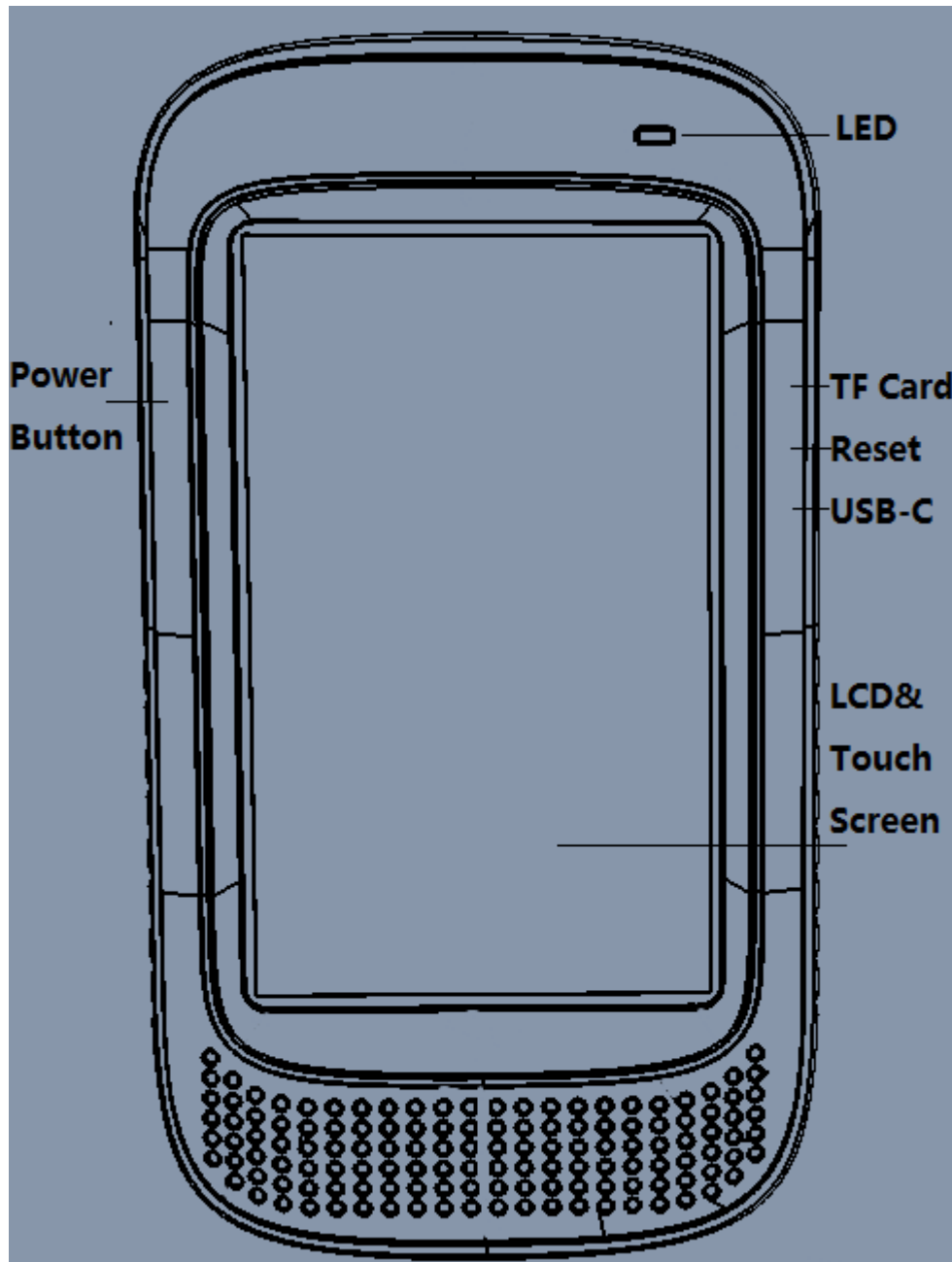• Interactive Data Logging sessions and remote control —enable direct contact with

Vident Technical Support for first-hand bugs troubleshooting
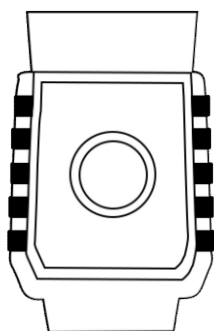
1.3 Tool Descriptions

This section illustrates external features, ports and connectors of the scanner.

1.3.1 Diagnostic Tablet Interface

(1) iSmart600 MAX

(2) iSmartVCI(Mini)

IMPORTANT

Do not use solvents such as alcohol to clean display. Use a mild nonabrasive detergent and a soft cotton cloth.

1.4 Technical Specifications for Tablet

(1)iSmart800Pro

Operating System	Android 7.1.2
Processor	Cortex-A7,RK3128, 1.3GHz
Memory	1GB RAM & 8GB ROM+64GB SD Card
Display	5 inch 800*480 IPS LCD touch screen
Connectivity	WIFI 802.11(a/b/g/n) frequency 2.4G single band WIFI, Bluetooth 4.0
	TF card slot: support SDHC/SDXC, maximum 128G
	Type-C Interface
G-sensor	Gravity acceleration sensor
Power and Battery	4200mAh polymer li-ion battery,
Input Voltage	DC/12V 2A
Size	246*156*32mm
Operating Temperature	0 to 40°C
Storage Temperature	-20 to 60°C

2. Getting Started

This section describes how to power on/down the scanner, provides brief introductions of applications loaded on the scanner and display screen layout of the scan tool.

2.1 Powering up the Scanner The unit operates on any of the following sources:

• Internal Battery Pack
• 12V AC/DC Power Supply

2.1.1 Internal Battery Pack

The tablet scanner can be powered with the internal rechargeable battery. The fully charged battery is capable of providing power for 6~8 hours of continuous operation. If the battery remains unused for a long period of time or the battery is completely discharged, it is normal that the tool will not power on while being charged. Please charge it for a period of 10 minutes and then turn it on.

2.1.2 12V AC/DC Power Supply

The scan tool can also be powered from a wall socket using the AC/DC power supply. The AC/DC power supply also powers the internal battery pack charging.

To connect to wall plug:

1. Connect the 12V power adapter to scanner and plug it to the wall socket.
2. Press the power switch of the scan tool to power it on; meanwhile the scanner tool starts charging automatically also.

2.2 Power on/off the Scanner

2.2.1 Power on

Press the Power button on the top side of the tablet for 5 seconds to turn the tool on.

Note: If it is the first time you have used this tool or the tool remains idle for a long period of time, the tool could fail to turn on. Please charge the tool for a minimum of 5 minutes and attempt to turn on again.

2.2.2 Power off

All vehicle communication must be terminated before shutting down the scanner. Forcing a shut down while communicating may lead to ECM problems on some vehicles. Exit the Diagnostic application before powering down.

To power off the scanner

(1) Click the windows icon on the left corner of the screen.
(2) Select Power and select the Shut Down option to power the scanner off.

2.2.3 Lock & unlock the screen

When it is ON, press the Power button once to lock the screen. The system will lock the screen automatically after the tool remains idle over the preset standby time.

NOTE

In case of emergency, press and hold the Power button for 5 seconds to force shutdown.
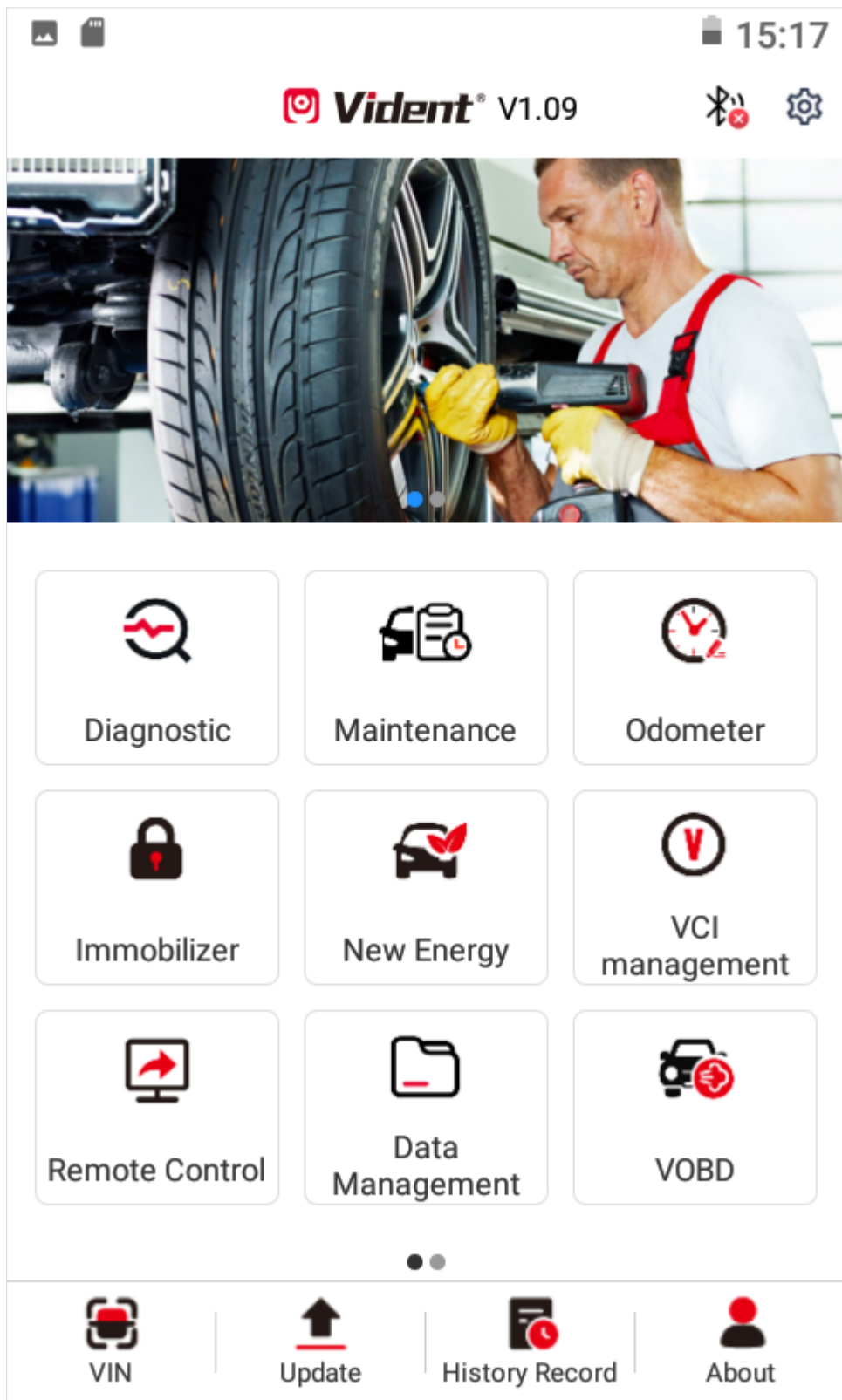
2.2.4 Reboot System

In case of system crash, press and hold the Power button for 10 seconds to reboot the system.

2.2.5 Screenshot

On the display interface, quickly press the power button twice to directly take a screenshot of the interface.

2.3 Screen Layout of Home Screen

When the scan tool boots up, press the iSmart desktop icon to launch the diagnostic application.

2.3.1 Application Buttons

This section briefly introduces the applications that are preloaded into the scanner:

Name	Button	Description
Diagnostic		Configure the unit to operate as a diagnostic tool
Maintenance		Common required special services or functions such as ABS bleed, AFS, Ajuste Fuel,BRT,DPF,EPB,Gear Box, Gear Learn, Immobilizer,Injector, Odometer, OilReset, SAS,Sun Roof, Suspension,TPMS,TPS
Data management		leads to screens for saved screenshots and pictures and playing back recorded live data stream, as well as stored logging data and uninstallation of software.
Odometer		Mileage setting and calibration
Immobilizer		Automotive safety and key matching function testing
Setting		leads to screens for adjusting default settings to meet your own preference and view information about the scanner.
VOBD		Through this function, the voltage of each pin on the OBD can be measured
Remote Control		leads to the application TeamViewer for remote control when you need any support from Vident support team
VCI management		VCI Upgrade , firmware Update, and VCI reset.

2.3.2 Diagnostics Toolbar

VIN		Reading the VIN of the car under testing automatically
Update		leads to screens for registration and updating of the scanner and managing your scanner serial numbers and sending us feedback about the scanner.
History Record		Record the previously tested vehicle models for easy access to test records.
About		leads to screen of product information such as serial number and password, which is required for product registration.

3 Diagnostic Operations

This section illustrates how to use the scanner to read and clear diagnostic trouble codes, view "live" data readings and ECU information on controllers installed, preform special functions such as actuation and coding, and perform vehicle services and maintenances on more than 80 vehicle brands.

3.1 Establish Vehicle Communication

To connect the scanner with the vehicle under testing, you need to

1. Connect the VCI device to the vehicle's DLC with the diagnostic cable.
2. Connect the VCI device to the tablet via Bluetooth communication or USB cable.
3. Launch the diagnostic software, Check the VCI icon at the button of the main screen. if

there is a green tick icon at the lower right corner of the VCI icon , the diagnostic platform is ready to start vehicle diagnosis.

3.1.1 Vehicle Connection

The method used to connect the diagnostic connector to a vehicle's DLC depends on the vehicle's configuration as follows:

• A vehicle equipped with an OBD II management system supplies both communication and 12V power through a standardized DLC.

• A vehicle not equipped with an OBD II management system supplies communication through a DLC connection, and in some cases supplies 12V power through the cigarette lighter receptacle or a connection to the vehicle battery.

Connect to OBDII vehicles

(1) Locate the DLC.
(2) Connect the VCI with the diagnostic cable provided. Connect the diagnostic cable with the OBDII connector. Insert the OBDII connector into the vehicle's DLC.

Connect to NON-OBDII vehicles

This type of connection requires both the VCI device and a required OBD I adapter for the specific vehicle being serviced.

(1) Locate the required OBD I adapter and connect its 16-pin jack to the diagnostic cable.
(2) Connect the attached OBD I adapter to the vehicle's DLC.
(3) The VCI can be powered from the cigarette lighter when necessary.
(4) Plug the DC power connector of the cigarette lighter into the DC power supply input port on the VCI.
(3) Connect the male connector of the cigarette lighter into the vehicle's cigarette lighter receptacle.

3.1.2 VCI Connection

The VCI (Vehicle Communication Interface) can be connected with the tablet via wireless Bluetooth or USB cable.

Bluetooth Communication

By default, the Vehicle Communication Interface(VCI) is connected with the tablet by Bluetooth. If you find the Bluetooth indicator on the VCI is not in green and there is no

green tick on the VCI icon in the software, it indicates the VCI has not been connected with the tablet Bluetooth.

To set Bluetooth connection, please make sure the VCI is connected with the data link connect(DLC) in the car.

(1)Slide the right side of screen and the action center would pop up. Check if the Bluetooth icon is in blue. If not, click it. When it turns blue, check if the Bluetooth indicator on your VCI turns green. If not, repeat the above steps.

(2)If there is no Bluetooth icon in the action center, click the Connect icon in the action center. The name of your VCI, eg. VD0001 would appear in the device list. Select it to pair. If not work, repeat the above steps. The iSmart VCI and tablet will usually automatically connect anytime the two devices are in range of each other with Bluetooth turned on. The working range of the Bluetooth communication is about 70～80 meters.

USB Cable Communication

Connect the standard 2.0 USB end of the USB cable with the table and the other end with

the VCI.A green tick would display at the bottom right corner of the VCI icon

indicates the Tablet is communicating with the VCI device.

3.1.3 No communication troubleshooting

If the tablet is not connected to the VCI, the error indicator in the VCI would display. Please do the following check-ups:

• Check if the VCI is powered up.

• In case of Bluetooth connection, check if the Bluetooth device is paired correctly. Check if the name of the paired Bluetooth device is same to that on the VCI sticker.

• If during the diagnosis process, the communication is suddenly interrupted due to the loss of signal, check if there is any object that causes signal interruption.

• Check if the VCI device is properly positioned.

• Try standing closer to the VCI device to obtain more stable signals, and faster communication speed.

• In case of Bluetooth connection, check the cable connection between the Tablet and the VCI device.

• Check if the Connection indicator on the VCI device is illuminated for Bluetooth or USB.

3.2 Vehicle Identification

Typically the scanner identifies a vehicle by any of the following methods:

•Automatic VIN acquisition

• Manual VIN entry

• Manual vehicle selection

NOTE

Not all identification options listed above are applicable to all vehicles. Available options may vary by vehicle manufacturer.

3.2.1 Automatic VIN Acquisition

The iSmart diagnostic system features the latest VIN-based Auto VIN Scan function to

identify CAN vehicles in just one touch, which allows the technician to quickly detect vehicles, scan all the diagnosable ECUs on every vehicle and run diagnostics on the selected system.

To identify a vehicle automatic VIN acquisition:

(1) Tap Diagnostic from the Home screen of the iSmart application.

(2) Tap the VIN Auto Reading button on the left top of the screen. The scanner starts VIN scanning. Once the test vehicle is successfully identified, the system will guide you to the Vehicle Diagnostics screen directly.

(3)In some cases when users have selected the vehicle brand instead of performing Auto VIN Reading in the first place, the system still provides an option for vehicle VIN scan.

3.2.2 Manual VIN Entry

For some vehicles that do not support the Auto VIN Reading, iSmart supports Manual VIN Entry by manually inputting a 17-digit VIN code. To identify a vehicle by manual VIN entry:

1. Tap Diagnostic from the home screen of the iSmart application.

2. Tap the VIN Auto Reading button. Select Manual Input.

3.Tap the input box and enter the correct VIN.

3.2.3 Manual Vehicle Selection

When the vehicle's VIN is not automatically retrievable through the vehicle's ECU, or the specific VIN is unknown, you can identify the vehicle by Manual Vehicle Selection according to certain VIN characters, such as model year, and engine type.

To identify a vehicle by manual vehicle selection:

1. Tap Diagnostics and select the vehicle manufacturer.

2. On each screen that appears, select the correct option and then tap the OK button. Do this until the complete vehicle information is entered and the menu of controller selection displays.

3.3 System Selection

After identified the vehicle, a menu for selecting system to test displays. Menu options typically include:

•Auto Scan

•Control Unit

3.3.1 Auto Scan

Auto Scan performs an automatic system test to determine which control modules are

installed on the vehicle and obtain diagnostic trouble codes (DTCs) overview. Depending on the number of control modules, it may take a few minutes to complete the test.

To perform an automatic system scan:

1. Click Auto Scan from the diagnostic menu. The system would start scanning the control modules.

2. To pause the scan, tap the Pause button on the screen.

3. At the end of successful automatic controller scan, a menu with a list of installed controllers together with their DTC overview displays.

-!-: Indicates that the scanned system may not support the code reading function, or there is a communication error between the tester and the control system.

?-?-: Indicates that the vehicle control system has been detected, but the tester cannot accurately locate it.

Fault | #: Indicates there is/are detected fault code(s) present; "#" indicates the number of the detected faults.

Pass | No Fault: Indicates the system has passed the scanning process and no fault has been detected.

4. If there is diagnostic trouble code(s) detected in a control unit, tap the Report button on the screen to view details of code information.

5. Or tap Quick Erase button to clear them.

3.3.2 Control Unit

This option allows you to manually locate a required control system for testing through a series of choices. Simply follow the menu driven procedure, and make proper selection each time; the program will guide you to the diagnostic function menu after a few choices you've made. To select a system for testing:

1. Select Control Unit from the menu and a controller menu displays.

2. Select the system you would like to test. When the scanner has established connection with the vehicle, the Function Menu displays.

3.4 Diagnostic Operations

After a system is selected and the scanner establishes communication with the vehicle, the Function Menu displays. Generally the menu options are:

• Read Codes

• Erase Codes

• ECU Information

• Live Data

NOTE

Not all function options listed above are applicable to all vehicles. Available options may vary by the year, model, and make of the test vehicle. A 'The selected mode is not supported!'message displays if the option is not applicable to the vehicle under test.

3.4.1 Read Codes

Read Codes menu lets you read trouble codes found in the control unit. To read codes from a vehicle:

1. Select Read Codes from the Diagnostic Function menu. A code list including code number and its description displays.

2. Slide up and down to view additional information when necessary.

3. Select Save to store DTC information, and tap Print to print the code information. Or use the ESC button to exit.

3.4.2 Erase Codes

After reading the retrieved codes from the vehicle and certain repairs have been carried out, you can erase the codes from the vehicle using this function. Before performing this function, make sure the vehicle's ignition key is in the ON (RUN) position with the engine off. To clear codes:

1. Select Erase Codes from Select Diagnostic Function menu.

2. Follow the on-screen instructions and answer questions about the vehicle being tested to complete the procedure.

3. Return to Read codes to recheck. If any codes remain, repeat the above steps.

3.4.3 ECU Information

ECU Information screen displays the identification data of the control module under test, such as the control module identification string and the control module coding.

To read ECU information:

1. Select ECU Information from Select Diagnostic Function menu.

2. A screen with detailed information of the selected control module displays.

3.Click function key Save to store ECU information, and click Print to print the information. Or use the ESC button to exit.

3.4.4 Live Data Live

Data menu lets you view real time PID data in text, graph and gauge formats, learn good sensor data and compare them with faulty data, and record live data from a selected vehicle electronic control module. Menu options typically include:

• All Data

• Custom List

3.4.4.1 Datastream

Mode All Data menu lets you view all live PID data from a selected control module. The diagnostic system allows you to view live data information in 6 different types of display modes.

• Text Mode - this is the default mode which displays the parameters in texts.

• Graph Mode - displays the parameters in waveform graphs, giving you the 'real picture' of what's going on in the vehicle. You could view up to 4 parameter graphs simultaneously and easily find and zoom in on a particular string of data.

• Merged Graph Mode - merges multiple PID plots into one coordinate to how they affect each other, providing you with the most comprehensive and functional look at live data possible.

• Gauge Mode - displays the parameters in the form of an analog meter.

• Study Mode - to learn good live sensor data values during idle, KEKO, acceleration, deceleration, part load and heavy load on each vehicle comes into your shop and records them for future reference.

• Comparison Mode–to compare the faulty sensor and parameter readings to the good readings, and you will be alarmed when a faulty sensor reading is detected.

 NOTE

• *Study and Comparison modes are available for viewing of parameter readings in text mode ONLY.*

• *In case no learned value is stored in the scan tool, the Comparison Mode will not be available.* Functional Buttons:

To Top: to move a data line to the top of Data List screen

Page Down: to move a data line to the bottom of the list.

Record: To record live data to memory of the scanner for offline review, just tab the button Record, and tap Stop to stop recording at any time.

Print: To save the data to PDF format and/or print out. Replay: to replay the recorded data.

Help: tips on how to use this function.

3.4.4.2 All Data

To view all live PID data:

1. Tap Live Data from Select Diagnostic Function menu to display the live data menu.

2. Tap All Data from the menu to display the data stream screen. All readings will be displayed in text format by default.

3. Swipe the screen up and down or use the PAGE UP and PAGE DOWN button to view additional information when necessary.

4. To view live PID in graph format, select Graph, and 4 PID plots display. To view another PID plot, tap the name of a plot and a list of available PIDs display. Select one from the dropdown box and the plot changes to the newly selected PID. To view the plots with more details, use the Zoom in button; instead, use the Zoom out button.

5. To see how the PIDs affect each other, select the Graph Merge tab to merge them into one coordinate for easy and intuitive diagnosis.

6. To view parameters in the form of an analog meter, select Gauge.

3.4.4.3 Custom Data List

Custom Data List menu lets you to minimize the number of PIDs on the data list and focus

on any suspicious or symptom-specific data parameters.

To create a custom data list:

1. Tap Custom List from the menu to display all available parameters from the selected control module.

2. The custom data stream selection screen displays. Tap the lines you wish to select.

3. Tap the OK button to complete the selection, and all selected parameters display.

4. Select Graph, Graph Merge, and Gauge separately to view the parameter in other formats. 3.4.4.4 Study And Comparison Mode of Live Data

The scanner is able to learns and records good live sensor data values, compares with the faulty sensor and parameter readings to the good readings and warns the technician of the faulty sensor data.

To learn and record good sensor value:

1. Connect the scanner to a vehicle that in good shape.

2. Select live data> All Data to display all available parameters from the selected control module. Select Study Mode, and a dropdown list of working conditions display.

3.Select one condition from the list to start studying the good data. When it finishes, tap this condition again to exit studying.

4. The good reference data would be saved and you can compare the live data on any other car with it for comparison.

5. Uninstall Software

After click this icon, undesired software can be uninstalled.

6 Remote Control

Remote Control enables you to start TeamViewer for remote control when you need any supports from Vident technical support team. If you need Vident support team to remote control your iSmart , please do as follow:

1. Email support@videnttech.com with a brief description of the problem you've got and reserve the time for remote control operation.

2. Click the Remote Control icon on the main menu to start TeamViewer.

3. Send your ID and password to us to let our team to take control your tablet. Make sure the Display Tablet is connected to the Internet before launching the Remote Control application, so that the Display Tablet is accessible to receive remote support from the third party.

7 Setting

This section illustrates how to program the scanner to meet your specific needs.

When Setting is selected, a menu with available service options displays. Menu options

typically include:

• Language

• Display Mode

• Unit

• User Information

• Reset Setting

7.1 Language

Select Language opens a screen that allows you to choose system language. The scan tool is set to display English menus by default.

To configure system language:

1. Select Setting from the Home screen of the diagnostic application and select Language. Then all available language options display.

2. Select your local language.

7.2 Display Mode

Selecting Display Mode opens a screen that allows you to toggle the display mode between full-screen view and display with Windows tool bar. The scan tool is set to display with full-screen view by default.

To configure display mode:

1. Select Setting from the Home screen of the diagnostic application.

2. Tap Display Mode and available modes display.

3. Select a display mode.

7.3 Unit

Selecting Unit opens a dialog box that allows you to choose between British customary or metric units of measure.

To change the unit setup:

1. Select Setting from the Home screen of the diagnostic application.

2. Tap Unit and available unit system display.

3. Select a unit system.

7.4 User Information

Selecting User Information option opens a screen to input and manage your workshop information. Your workshop information will be displayed on your test reports that are presented to your customers.

To input your workshop information:

1. Select Setting from the Home screen of the diagnostic application.

2. Tap User Information option.

3. Input your workshop name, phone and fax number and email address with the keypad.

7.5 Reset Setting

Selecting Reset Setting option lets you to reset your scan tool to factory defaults. This option will also clear the workshop information.

To reset your scan tool to factory defaults:

1. Select Setting from the Home screen of the diagnostic application.

2. Select Reset Setting option.

3. Tap the Reset button. The scan tool reboots automatically and the reset is completed.

NOTE

It is suggested that the Save button not be pressed until you have finished all setups. The scanner will reboot automatically when the button is pressed.

10 About

Selecting About option opens a screen that show information about your scan tool, such as serial number and register password which may be required for product registration. To view the About page, please make sure the device is powered either by the AC/DC power supply or the vehicle through the Vehicle Communication Interface. Otherwise, the serial number and password won't be shown.

To view information of your scan tool:

1. Connect the VCI with the tablet with Bluetooth or USB cable. Verify the VCI connection by checking if there is a green tick on the VCI icon on the home screen.

2. Tap the About icon.

3. A screen with detailed information of the scanner displays.

4. Tap the Back button to exit.

11 Registration and Update

1. Connect the iSmart with internet.

2. Tap Update on the home screen of the diagnostic application. Wait till the following screen displays.

3. Tap Register.

4. Fill out the registration form and tap Register to submit.

5. When registration is finished, the initial logging screen would display. Click Log In and input your ID and Password.

6. All available updates would display. Tap update all or Tap the download icon to install updates.

7. When update done, the diagnostic software would restart automatically.

General Notice

For your own safety and the safety of others, and to prevent damage to the equipment and vehicles, read this manual thoroughly before operating your code reader. The safety messages presented below and throughout this user's manual are reminders to the operator to exercise extreme care when using this device. Always refer to and follow safety messages and test procedures provided by vehicle manufacturer. Read, understand and follow all safety messages and instructions in this manual.

Safety Precautions and Warnings

To prevent personal injury or damage to vehicles and/or the scan tool, read this instruction manual first and observe the following safety precautions at a minimum whenever working on a vehicle:

Always perform automotive testing in a safe environment. Wear safety eye protection that meets ANSI standards. Keep clothing, hair, hands, tools, test equipment, etc. away from all moving or hot engine parts. Operate the vehicle in a well-ventilated work area: Exhaust gases are poisonous. Put blocks in front of the drive wheels and never leave the vehicle unattended while running tests.

Use extreme caution when working around the ignition coil, distributor cap, ignition wires and spark plugs. These components create hazardous voltages when the engine is running.

Put the transmission in PARK (for automatic transmission) or NEUTRAL (for manual transmission) and make sure the parking brake is engaged.

Keep a fire extinguisher suitable for gasoline/chemical/ electrical fires nearby. Ignition is on or the engine is running.

Keep the scan tool dry, clean, free from oil/water or grease. Use a mild detergent on a clean cloth to clean the outside of the scan tool, when necessary.

FCC ID:2BDGQ-TABDIAG5

FCC WARNING

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.

Note: 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 or more of the following measures:

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

Note: The Grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. such modifications could void the user's authority to operate the equipment.

The device has been evaluated to meet general RF exposure requirement.
This equipment complies with FCC's RF radiation exposure limits set forth for an uncontrolled environment. This device and its antenna(s) must not be co-located or conjunction with any other antenna or transmitter.