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# **One-Year Limited Warranty**

Subject to the conditions of this limited warranty, Shenzhen Foxwell Technology Co., Ltd ("FOXWELL") warrants its customer that this product is free of defects in material and workmanship at the time of its original purchase for a subsequent period of one (1) year.

In the event this product fails to operate under normal use, during the warranty period, due to defects in materials and workmanship, FOXWELL will, at its sole option, either repair or replace the product in accordance with the terms and conditions stipulated herein.

#### Terms and Conditions

1 If FOXWELL repairs or replaces the product, the repaired or replaced product shall be warranted for the remaining time of the original warranty period. No charge will be made to the customer for replacement parts or labor charges incurred by FOXWELL in repairing or replacing the defective parts.

2 The customer shall have no coverage or benefits under this limited warranty if any of the following conditions are applicable:

a) The product has been subjected to abnormal use, abnormal conditions, improper storage, exposure to moisture or dampness, unauthorized modifications, unauthorized repair, misuse, neglect abuse, accident, alteration, improper installation, or other acts which are not the fault of FOXWELL, including damage caused by shipping.

b) The Product has been damaged from external causes such as collision with an object, or from fire, flooding, sand, dirt, windstorm, lightning, earthquake or damage from exposure to weather conditions, an Act of God, or battery leakage, theft, blown fuse, improper use of any electrical source, or the product was used in combination or connection with other product, attachments, supplies or consumables not manufactured or distributed by FOXWELL.

3 The customer shall bear the cost of shipping the product to FOXWELL. And FOXWELL shall bear the cost of shipping the product back to the customer after the completion of service under this limited warranty.

4 FOXWELL does not warrant uninterrupted or error-free operation of the product. If a problem develops during the limited warranty period, the consumer shall take the following step-by-step procedure:

a) The customer shall return the product to the place of purchase for repair or replacement processing, contact your local FOXWELL distributor or visit our website www.foxwelltech.us to get further information.

b) The customer shall include a return address, daytime phone number and/or fax number, complete description of the problem and original invoice specifying date of purchase and serial number.

c) The customer will be billed for any parts or labor charges not covered by this limited warranty.

d) FOXWELL will repair the Product under the limited warranty within 30 days after receipt of the product. If FOXWELL cannot perform repairs covered under this limited warranty within 30 days, or after a reasonable number of attempts to repair the same defect, FOXWELL at its option, will provide a replacement product or refund the purchase price of the product less a reasonable amount for usage.

e) If the product is returned during the limited warranty period, but the problem with the product is not covered under the terms and conditions of this limited warranty, the customer will be notified and given an estimate of the charges the customer must pay to have the product repaired, with all shipping charges billed to the customer. If the estimate is refused, the product will be returned freight collect. If the product is returned after the expiration of the limited warranty period, FOXWELL' normal service policies shall apply and the customer will be responsible for all shipping charges.

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6. Some states do not allow limitation of how long an implied warranty lasts, so the one-year warranty limitation may not apply to you (the Consumer). Some states do not allow the exclusion or limitation of incidental and

consequential damages, so certain of the above limitations or exclusions may not apply to you (the Consumer). This limited warranty gives the Consumer specific legal rights and the Consumer may also have other rights which vary from state to state.

# **Safety Information**

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 tool. 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 Message Conventions Used

We provide safety messages to help prevent personal injury and equipment damage. Below are signal words we used to indicate the hazard level in a condition.

#### A DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury to the operator or to bystanders.

#### 

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to the operator or to bystanders.

#### 

Indicates a potentially hazardous situation which, if not avoided, may result in moderate or minor injury to the operator or to bystanders.

## **Important Safety Instructions**

And always use your tool as described in the user's manual, and follow all safety messages.

#### 

- Do not route the test cable in a manner that would interfere with driving controls.
- Do not exceed voltage limits between inputs specified in this user's manual.
- Always wear ANSI approved goggles to protect your eyes from propelled objects as well as hot or caustic liquids.
- Fuel, oil vapors, hot steam, hot toxic exhaust gases, acid, refrigerant and other debris produced by a malfunction engine can cause serious injury or death. Do not use the tool in areas where explosive vapor may collect,

such as in below-ground pits, confined areas, or areas that are less than 18 inches (45 cm) above the floor.

- Do not smoke, strike a match, or cause a spark near the vehicle while testing and keep all sparks, heated items and open flames away from the battery and fuel / fuel vapors as they are highly flammable.
- Keep a dry chemical fire extinguisher suitable for gasoline, chemical and electrical fires in work area.
- Always be aware of rotating parts that move at high speed when an engine is running and keep a safe distance from these parts as well as other potentially moving objects to avoid serious injury.
- Do not touch engine components that get very hot when an engine is running to avoid severe burns.
- Block drive wheels before testing with engine running. Put the transmission in park (for automatic transmission) or neutral (for manual transmission). And never leave a running engine unattended.
- Do not wear jewelry or loose fitting clothing when working on engine.
- Don't connect or disconnect the equipments while the ignition is on or the engine is running.

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# 1 Using This Manual

We provide tool usage instructions in this manual. Below are the conventions we used in the manual.

# 1.1 Bold Text

Bold text is used to highlight selectable items such as buttons and menu options.

Example:

Select **Diagnostic** from the Home screen of the NT650BT application.

# 1.2 Symbols and Icons

## 1.2.1 Solid Spot

Operation tips and lists that apply to specific tool are introduced by a solid spot.

Example:

When VIN hotkey is selected, a menu that lists all available options displays. Menu options include:

- Automatic Read
- Scan VIN
- Manual Entry

## 1.2.2 Arrow Icon

An arrow icon indicates a procedure.

Example:

To connect to wall plug:

- 1. Connect the USB Type-C charge cable 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.

## 1.2.3 Note and Important Message

### Note

A NOTE provides helpful information such as additional explanations, tips, and comments.

Example:

### NOTE

Test results do not necessarily indicate a faulty component or system.

#### Important

IMPORTANT indicates a situation, which if not avoided, may result in damage to the test equipment or vehicle.

Example:

#### IMPORTANT

Do not soak scanner as water might find its way into the scanner.

# **2** Introduction

NT650BT Multi-Application Service Tool is an Android scanner with Wireless VCI Foxlink I for the most frequently performed services and maintenance of your workshop, it stands out in a variety of similar tools by delivering wider coverage of vehicles, more accurate diagnosis, more reliable performance and better user experience.

## 2.1 Scanner Descriptions

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





- (1) **5.5" TFT LCD Touch Screen** shows menus, test results and operation tips.
- 2 **Power Status Indicator** indicates the power status of the scanner.



Figure 2-2 Top View

- ③ **Power Switch** turns on the scanner, goes to sleep mode or wake up the scanner from sleep mode. Press and hold for 3 seconds for start or emergency shutdown. Double click to screenshot.
- (4) **USB Type-C Port** connects to wall plug to charge the scanner and can be used for data transfer.
- 5 **USB Type-A Port** provides a USB connection for the external storage devices.

#### IMPORTANT

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

# 2.2 VCI Dongle Descriptions

NT650BT connects to the vehicle and get data through the VCI dongle either by Bluetooth or USB communication.



Figure 2-3 Front View of VCI dongle

- 1 **Running Light** flashes during normal operation, and stays on or off when abnormal.
- 2 **Communication Light** is always on when VCI connect to device via Bluetooth or USB, and flashes when sending data.
- 3 Power Light turns to red when powered on.

## 2.3 Accessories

This section lists the accessories that go with the scanner. If you find any of the following items missing from your package, contact your local dealer for assistance.

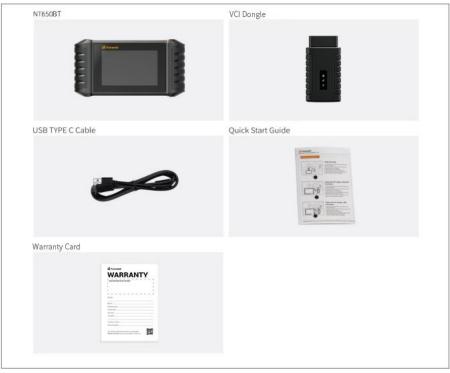


Table 2-1 Accessories

# 2.4 Technical Specifications

| ltem                    | Description  |
|-------------------------|--|
| Screen                  | 5.5" TFT Capacitive LCD screen; 1280*720 pixel   |
| Operation System        | Android 9.0  |
| Processor               | Quad-core, 1.3GHz  |
| Memory                  | 1GB  |
| SSD Hard drive          | 32GB   |
| Communication interface | Built-in WIFI 802.11 b/g/n Wireless LAN<br>USB2.0 OTG/standard USB 2.0 HOST<br>Bluetooth specification v2.1+EDR; Bluetooth 4.0 Low Energy<br>(LE) (10-20 m)          |
| Built-in Battery        | 4000mAh, Lithium-polymer battery, chargeable via 5V USB power supply   |
| Protocols               | ISO9141-2, ISO14230-2, ISO15765-4, K/L lines, Double K Line<br>SAE-J1850 VPW,SAE-J1850PWM,CAN ISO 11898,<br>High-speed, Middle-speed, Lows-peed and Single wire CAN, |

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|                     | KW81, KW82, GM UART, UART Echo Byte Protocol, Honda<br>Diag-H Protocol, TP2.0, TP1.6, SAE J1939, SAE J1939, SAE<br>J1708,Fault-Tolerant CAN,CAN FD, DOIP |  |
|---------------------|--|--|
| Working Temperature | -10 to 70°C  |  |
| Storage Temperature | -20 to 80°C  |  |
| Operating Humidity  | 5%-95% Non-Condensing  |  |
| Dimensions          | 236*124*38mm (L*W*H)   |  |
| Weight              | 0.87kg (Main unit)   |  |

Table 2-2 Technical Specifications

# **3 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.

## 3.1 Powering up the Scanner

Before using the NT650BT applications (including updating the scanner), please make sure to provide power to the scanner.

The unit operates on any of the following sources:

- Internal Battery Pack
- External Power Supply

### 3.1.1 Internal Battery Pack

The tablet scanner can be powered with the internal rechargeable battery. The fully charged battery is capable of providing power for 5 hours of continuous operation.

#### NOTE

Please turn off the tablet to save power when not use.

### 3.1.2 External Power Supply

The tablet can also be powered from a wall socket using the USB charging adapter. The tablet also charges its internal battery pack through USB Type-C cable.

## 3.2 Shutting Down the Scanner

All vehicle communication must be terminated before shutting down the scanner. Exit the Diagnostic application before powering down.

### To shut down the scanner:

- 1. Press and hold the Power button of the scanner for 3 seconds.
- 2. Click the **Power off** to shut down or **Reboot** to restart.

# 3.3 Screen Layout of Home Screen

After the scanner turning on, the screen show main menu of the application.

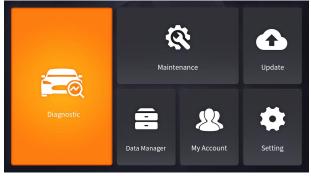


Figure 3-2 Sample Home Screen

## 3.3.1 Application Menu

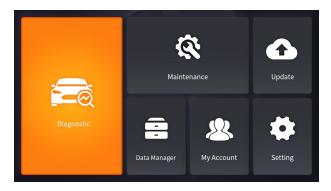


Figure 3-3 Sample Main Menu of Application

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

- **Diagnostic** leads to test screens for diagnostic trouble code information, freeze frame, live data and ECU information.
- Maintenance leads to screens for common used special functions like Oil light reset, EPB, BRT, and DPF etc.
- Update leads to screens for Foxwell ID registration and updating the scanner.

- Data Manager leads to screens for saved screenshots, pictures and test reports, and playing back live data, as well as debug logging data.
- My Account displays your Foxwell ID information like registered products and personal information and allows for sending us feedbacks about the scanner.
- Settings leads to screens for adjusting default settings to meet your own preference and view information about the scanner.
- **Remote Control** leads to TeamViewer to get remote support from Foxwell team or remote vehicle diagnostic.
- Functions Query the functions of model supported by the scanner.
- Firmware Update VCI firmware update.
- VCI Manager VCI manage (VCI binding, unbinding, rescan vehicle software).

## 3.3.2 Diagnostic Menu

Touch **Diagnostic** at the NT650BT application menu, and the Diagnostic menu will display. The operations of the buttons of Diagnostic menu are described in the below table.



Figure 3-4 Sample Diagnostic Menu Screen

| No. | Name   | Description  |  |
|-----|--------|--|--|
| 1   | Back   | Back to the previous screen.   |  |
| 2   | Home   | Back to the Application Menu.  |  |
| 3   | VIN    | Shortcut for VIN reading menu, which typically includes Automatic Read, Scan VIN and Manual Entry. |  |
| 4   | Search | Lets you search a vehicle make quickly.  |  |

| 5 | History        | Displays the tested vehicle records.  |
|---|----------------|---|
| 6 | Area           | Displays car makes from different origins like America, Asia, Europe and Chinese. |
| 7 | Quick Location | Allows you to find a vehicle by initials.   |

Table 3-5 Title Bar of Diagnostic Menus

# 4 My Account

This section introduces user account registration, login, device activation and other information.

When **My Account** application is selected, a menu with available options displays.

My Account Menu options typically include:

- My Account
- My Products
- Feedback and Suggestions

|                     | My Account | VC6 🛜 100% 🔒 08:02 |
|---------------------|------------|--------------------|
| A My Account        |            | >                  |
| My Products         |            | >                  |
| Feedback and Sugges | tions      | >                  |
|                     |            |                    |
|                     |            |                    |
|                     |            |                    |
|                     | Sign In    |                    |

Figure 4-1 Sample My Account Screen

# 4.1 Registration

You are allowed to create a Foxwell ID with the built-in client.

To register with built-in client:

1. Press **My Account** or **Update** from home screen of NT650BT diagnostic application, the user login page will show, then press **Free registration** button to register an account.

|                 |                 | VC6 🗟 100% |
|-----------------|-----------------|------------|
|                 |                 |            |
| 8 Email or Foxw | ell ID          |            |
| Password        |                 |            |
| Stay signed in  | Forget password |            |
|                 | Sign In         |            |
| Free            | registration    |            |
|                 |                 |            |

Figure 4-2 Sample Update Client Main Screen

 Enter the User Name (use one of your existing mail addresses as user name), and press Send Code button for get a verification code, Foxwell will send a 4-digit verification code to the email you just entered.

|                    | Register User   | 🕊 🖗 🖗 100% 🔮 08:11 |
|--------------------|---|--------------------|
|                    |   |                    |
| User Name•         | @foxwelltech.com  |                    |
|                    | The email is available for registration!  |                    |
| Verification Code• | 2914  | Sent(10S)          |
|                    | 0   |                    |
| Password*          | ······  |                    |
|                    | The password contains at least one letter and a number, and is 6-16 bits long.              |                    |
|                    | Password Strength: Weak   |                    |
| Confirm Password   | {   |                    |
|                    | 0   |                    |
|                    | By creating an account, you agree to <u>Foxwell's Conditions of Use and Privacy Notice.</u> |                    |
|                    | Free registration   |                    |

Figure 4-3 Sample ID Registration Screen

3. Get the security code in your mailbox, input the code as verification code. Then create a password and click **Free Registration** to complete.

| •                  | Register User  | <b>ሥር¦</b> ବି 100% 🖥 08:11 |
|--------------------|--|----------------------------|
|                    |  |                            |
| User Name*         | @foxwelltech.com   |                            |
|                    | The email is available for registration!   |                            |
| Verification Code* | 2914   | Sent(10S)                  |
|                    | 0  |                            |
| Password*          | ······   |                            |
|                    | The password contains at least one letter and a number, and is 6-16 bits long.       |                            |
|                    | OPassword Strength: Weak   |                            |
| Confirm Password*  |  |                            |
|                    | 0  |                            |
|                    | By creating an account, you agree to Eoxwell's Conditions of Use and Privacy Notice. |                            |
|                    | Free registration  |                            |

Figure 4-4 Sample ID Registration Screen

4. "The account has been created successfully" message will appear if you registered successfully.

|                    |  | 100% 🛱 08:15 |
|--------------------|--|--------------|
| User Name-         | lianghua@foxwelltech.com   |              |
| Verification Code- | Completed  | Send code    |
| Password           | Ø  |              |
|                    | The account has been created successfully!   |              |
| Confirm Password   | 0  |              |
|                    | By creating an account, you agree to <u>Eoxwell's Conditions of Use and Privacy Notic</u><br>Free registration | e.           |

Figure 4-5 Sample Registration Done Screen

5. The serial number will show after registration. Click **Submit** to activate the product or press **S** to back.

|     | My Pro                                | oducts         | KC 🕫 🕫 06:30 |
|-----|---------------------------------------|----------------|--------------|
| S/N | Activation                            | S/N Management |              |
|     |                                       |                |              |
|     | · · · · · · · · · · · · · · · · · · · |                |              |
|     |                                       |                |              |
|     | Sut                                   | omit           |              |
|     |                                       |                |              |
|     |                                       |                |              |
|     |                                       |                |              |
|     |                                       |                |              |

Figure 4-6 Sample Product Activation Screen

## 4.2 Sign in

Press **My Account** or **Update** from home screen of NT650BT diagnostic application, the user login page will show, enter your FOXWELL ID and password, and press **Sign in** button to sign in.

|                       |                 | <b>VC6</b> 🛜 100% 🛱 08:05 |
|-----------------------|-----------------|---------------------------|
|                       |                 |                           |
| R Email or Foxwell ID |                 |                           |
| Password              |                 |                           |
| 🥏 Stay signed in      | Forget password |                           |
| Sign                  | In              |                           |
| Free regis            | stration        |                           |
|                       |                 |                           |
|                       |                 |                           |

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## 4.2.1 Product activate

If you are logging in for the first time, it will prompt and guide you to activate the current device while sign in successfully.

### ▶ To activate product

1. Press OK button to activate product and press Cancel to back.

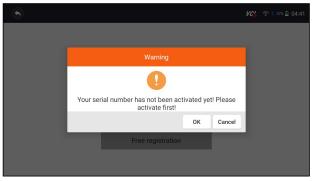


Figure 4-8 Sample Product Activation Screen

2.Click Submit to continue the activation and press So to give up activation.

| Activate Serial Number | KG 🖘 🕯 04:41 |
|------------------------|--------------|
|                        |              |
|                        |              |
|                        |              |
| Submit                 |              |
|                        |              |
|                        |              |
|                        |              |
|                        |              |

Figure 4-9 Sample Product Activation Submit Screen

3. "Product is activated successfully" message will appear if activate successfully.

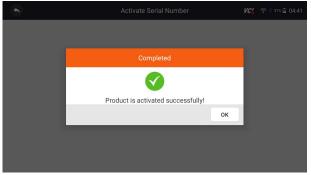


Figure 4-10 Sample activate success Screen

## 4.3 My Account

**My Account** option allows you to check and modify or complete your account information including user name, e-mail, telephone, address and so on.

|                          | My Account | 100% 🖗 100% 🔒 08:40 |                          |
|--------------------------|------------|---------------------|--------------------------|
| My Account               | •          | My Account          | <b>VC6</b>               |
| My Products              | User Name  |                     | lianghua@foxwelltech.com |
| Push Message             | First Name |                     |                          |
| Feedback and Suggestions | Last Name  |                     |                          |
|                          | Email      |                     | lianghua@foxwelltech.com |
| _                        | Phone      |                     |                          |
|                          | Address    |                     |                          |
|                          |            |                     | Modify Back              |

Figure 4-11 Sample My Account Screen

## 4.4 My Products

This option let you activate a new product and manage activated products including serial number and expiration date.

| • | My Ac          | count          | 🖋 🧟 🕫 🕸 دوني 🕫 🖉 |
|---|----------------|----------------|------------------|
|   | S/N Activation | S/N Management |                  |
|   |                |                |                  |
|   |                |                |                  |
|   | Serial Number  |                |                  |
|   | Sub            | mit            |                  |
|   |                |                |                  |
|   |                |                |                  |
|   |                |                |                  |
|   |                |                |                  |

Figure 4-12 My Product Screen

## 4.5 Feedback and Suggestions

This option allows you to log on your e-mail and send feedback and suggestions about Foxwell products.

To send feedback and suggestions about Foxwell products:

- 1. Press **My Account** from home screen of the NT650BT diagnostic application.
- 2. Press **Feedback and Suggestions** option to show Feedback page, there are two options--Diagnosis Feedback and General Feedback.

| Feedback and Suggestions | KC0 🛜 100% 🗟 08:45     |
|--------------------------|------------------------|
| All the time 🗸           | Input key words Q      |
|                          |                        |
|                          |                        |
|                          |                        |
|                          |                        |
| Select All               | Deselect Delete Cancel |
|                          |                        |

Figure 4-13 Sample feedback record Screen

3. Select **Diagnosis Feedback** or **General Feedback** for creating a feedback. Select the type of error and some necessary content and problem description or attachments. Press **Save** button to save the feedback. Or press Email button to send if you have an email account.

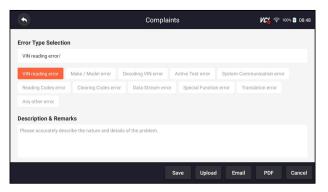


Figure 4-14 Sample Feedback Edit Screen

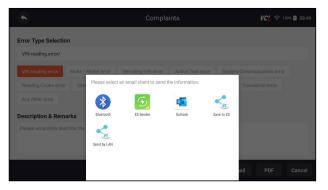


Figure 4-15 Sample Email Select Screen

# **5 Update**

The scanner can be updated to keep you stay current with the latest development of diagnosis. This section illustrates how to register and update your scan tool. You can register both on Foxwell website or by the built-in update client.

#### NOTE

Before registration and updating, please make sure your network works correctly and the tablet is fully charged or connect to external power supply.

## 5.1 Automatic Update

When the automatic update is enabled, an update symbol is displayed in the upper right corner if any software version is released.

| • • •   |           | <b>Q</b> Search | VC6 🗢 100% 🖻 08:51 |            |  |
|---------|-----------|-----------------|--------------------|------------|--|
| History | DEMO      | OBDII           | ABARTH             | ACURA      |  |
| All 🕨   | DEWIO     | OBDI            | ADARTH             | ACURA      |  |
| America | ALFA      | ASTONMARTIN     | AUDI               | BAICHUANSU |  |
| Asia    | <         |                 |                    |            |  |
| Europe  | BAICMOTOR | BAICSENOVA      | BAICWEIWANG        | BENTLEY    |  |
| China   |           |                 |                    |            |  |
|         | BJEV      | BMW             | BRILBMW            | BRILLIANCE |  |

Figure 5-1 Sample Automatic Update Screen

- To automatic update or refer to 11.7 Automatic Update:
  - 1. Press **Settings** from home screen of the NT650BT diagnostic application.
  - 2. Select Automatic Update, then set automatic update notice enable.

# 5.2 Manual Update

To update the diagnostic application:

- 1. Press **Update** of NT650BT diagnostic application, and the update client starts up automatically.
- 2. The available updates display. Click the check box(s) in front of the software you wish to update and then click the **Update** button to download.
- 3. When all the items are updated, an "Update Done" message displays.

#### NOTE

Please make sure your network works correctly and the tablet is fully charged or connect to external power supply.

|   |             | Update |            | VC4               | 🗟 45% 🚰 09:0          |
|---|-------------|--------|------------|-------------------|-----------------------|
| ASTONMARTIN                                       | V1.40.003 🔻 | 2MB    | 2021/06/12 | Update content >  | Upgrade<br>successful |
| 2 AUTOVIN   | V1.10.005 🔻 | 1MB    | 2021/06/12 | Update content >  | Upgrade<br>successful |
| I FERRARI   | V1.40.005 🔻 | 3MB    | 2021/06/12 | Update content >  | Latest                |
| LEXUS   | V1.45.001 🔻 | 10KB   | 2021/06/12 | Update content >  | Latest                |
| MASERATI  | V1.40.005 🔻 | 3MB    | 2021/06/12 | Update content >  | Upgrade<br>successful |
|   | V1 21 002 💌 | OMD    | 2021/06/12 | Undate content >  | Upgrade               |
| 0 software updates<br>Serial number:1005011000231 |             |        | Re         | fresh Upgrade All | Back                  |

Figure 5-2 Sample Update Screen

# **6 VCI Manager**

VCI Manager is used to unbind and bind the VCI. When the VCI needs to be replaced, you need to use this function to unbind the old VCI and re-bind the replaced VCI.

Even if the VCI is not replaced, the existing VCI device will be automatically unbound when unbinding, then the existing VCI will be automatically bound, and the software of all vehicles in the device will be rescanned and refreshed, and finally the APP will be restarted.

### VCI unbind & rebind:

1. Click VCI Manager application on the NT650BT home screen.

2. After clicking Unbind a VCI dongle, it will display whether to unbind the current VCI. When clicking OK, it will execute unbind, rebind, and refresh the vehicle.



Figure 6-1 Sample Unbind a VCI dongle

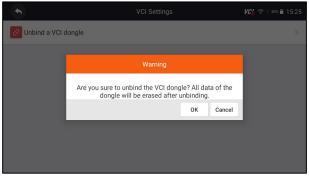


Figure 6-2 Sample Unbinding Confirmation Prompt

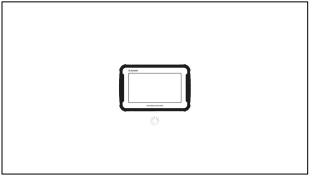


Figure 6-3 Sample Unbinding Current VCI

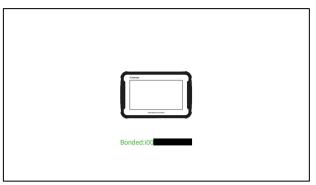


Figure 6-4 Sample Bind New VCI Successfully



Figure 6-5 Sample Rescan Vehicle Software

# 7 Firmware Update

This application allows you to update the firmware of NT650BT.

▶ To update the firmware:

- 1. Click the **Update** application on the NT650BT home screen.
- 2. Check and download the firmware package.
- 3. After the download is completed, it will automatically jump to the **Firmware Update** function module.
- 4. Check the battery level to ensure that the battery level should be greater than 20%.
- 5. It will start update automatically if there is an update available. If update failed, please follow the on-screen instructions to troubleshoot and repeat the update.



Figure 7-1 Sample Firmware Update Screen

6. "VCI firmware successfully message" will appear if update successfully.

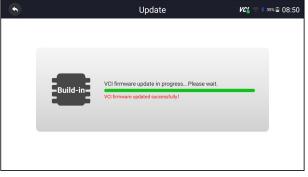


Figure 7-2 Sample Firmware Update Successfully Screen

### NOTE

If there is a firmware update available, the update file will be downloaded and saved automatically when you try to update the diagnostic software. And you will be prompted to upgrade the firmware.

# 8 Vehicle Identification

This section illustrates how to use the scanner to identify the specifications of the vehicle under test.

The vehicle identification information presented is provided by the ECM of the vehicle being tested. Therefore, certain attributes of the test vehicle must be entered into the scan tool to ensure the data displays correctly. The vehicle identification sequence is menu driven. Simply follow the screen prompts and make a series of choices. Each selection you make advances you to the next screen. Exact procedures may vary somewhat by vehicle.

It typically identifies a vehicle by any of the following means:

- VIN Reading
- Manual Selection

#### NOTE

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

# 8.1 Vehicle Connection

- To connect to vehicle:
- 1. Locate the data link connector (DLC). The DLC is generally located under the dash on the driver side of the vehicle.



Figure 8-1 Sample Vehicle Connection Screen

- 2. Plug the VCI to the vehicle DLC directly.
- 3. Switch the ignition key to the ON position.
- 4. Boot up the scanner, launch the diagnostic APP and make Bluetooth pairing of the VCI dongle and tablet.
- 5. Check if the connection indicator turns to green. If yes, it means the scanner is ready to start diagnosis.

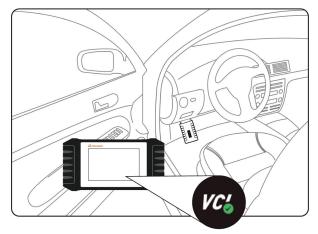


Figure 8-2 Sample Scanner Connection Ready Screen

## 8.2 VIN Reading

**VIN** button **(P)** on the title bar is a shortcut for VIN reading menu, which includes **Automatic Read**, **Manual Entry**, eliminating the need for navigating through complicated car identification process.

|                | VIN | VC 🛜 100% 🔒 08:58 |
|----------------|-----|-------------------|
| Automatic Read |     |                   |
| Manual Entry   |     |                   |
|                |     |                   |
|                |     |                   |
|                |     |                   |
|                |     |                   |
|                |     |                   |

Figure 8-3 Sample VIN Hotkey Screen

### 8.2.1 Automatic Read

Automatic Read allows to identify a vehicle by automatically reading the vehicle identification number (VIN).

To identify a vehicle by Automatic Read:

- 1. Select **Diagnostic** from home screen of the NT650BT application.
- 2. Click VIN and choose Automatic Read from the option list.

 When the scan tool builds connection with the vehicle, the VIN number displays. If the Vehicle Specification or VIN code is correct, press the OK to continue.

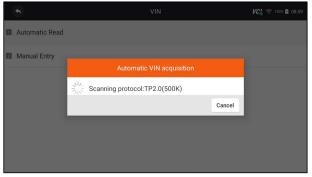


Figure 8-4 Sample Automatic Read Screen

4. If it takes too long to get the VIN code, press **Cancel** to stop and input the VIN manually. Or if failed to identify the VIN, please input the VIN manually or click **Cancel** to quit.

| 63 |  |  |
|----|--|--|
| 2  | Manual Entry   |  |
|    | The VIN number of the vehicle is not identified. Please input<br>the VIN manually. |  |
|    | OK Cancel  |  |
|    |  |  |

Figure 8-5 Sample Manual Entry Screen

### 8.2.2 Manual Entry

Manual Entry allows to identify a vehicle by inputting VIN manually.

- To identify a vehicle by Manual Entry:
  - 1. Select **Diagnostic** from home screen of the NT650BT application.
  - 2. Click VIN and choose Manual Entry from the option list.
  - 3. Press Keyboard button to input a valid VIN code and press **OK** to continue.

| \$             | VII          | 4  |        | VC' 😤 100% 🛍 09:06 |
|----------------|--------------|----|--------|--------------------|
| Automatic Read |              |    |        |                    |
| Manual Entry   | Manual Entry |    |        |                    |
|                | VIN          |    |        |                    |
|                |              | ок | Cancel |                    |
|                |              |    |        |                    |
|                |              |    |        |                    |

Figure 8-6 Sample Manual Entry Screen

## 8.3 Manual Selection

Select vehicle brand you are to test, and two ways of getting to the diagnostic operations are available.

- Smart VIN
- Manual Selection

|           | BMW<br>V2.30.009 | 0.00  | <b>A</b> | * | B | - | VC 🛜 100% 🖁 09:07 |
|-----------|------------------|-------|----------|---|---|---|-------------------|
| Start Nei | w Session        |       |          |   |   |   |                   |
| 1 Sma     | artVIN           |       |          |   |   |   |                   |
| 2 Mar     | ual Sele         | ction |          |   |   |   |                   |
|           |                  |       |          |   |   |   |                   |
|           |                  |       |          |   |   |   |                   |
|           |                  |       |          |   |   |   |                   |
|           |                  |       |          |   |   |   |                   |
|           |                  |       |          |   |   |   |                   |

Figure 8-7 Sample Vehicle Entry Screen

### 8.3.1 Smart VIN

Smart VIN allows to identify a vehicle by automatically reading the vehicle identification number (VIN).

- ▶ To identify a vehicle by Smart VIN:
  - 1. Select **Diagnostic** from home screen of the NT650BT application.
  - 2. A screen with vehicle manufacturers displays. Select the area where the vehicle manufacturer from. A menu of all vehicle manufacturers displays. Or tap the Search box to search the car you are to test.

| • • •   |           | <b>Q</b> Search | <b>VC¦a</b> 奈 100% 🔮 09:08 |            |  |
|---------|-----------|-----------------|----------------------------|------------|--|
| History | DEMO      | OBDII           | ABARTH                     | ACURA      |  |
| All 🕨   | DEMO      | OBDI            | ABARTH                     | ACURA      |  |
| America | ALFA      | ASTONMARTIN     | AUDI                       | BAICHUANSU |  |
| Asia    | <         |                 |                            |            |  |
| Europe  | BAICMOTOR | BAICSENOVA      | BAICWEIWANG                | BENTLEY    |  |
| China   |           |                 |                            |            |  |
|         | D IEV     | DMM             |                            | DUILLIANCE |  |
|         | BJEV      | BMW             | BRILBMW                    | BRILLIANCE |  |

Figure 8-8 Sample Vehicle Selection Screen

3. Choose SmartVIN option to start reading the VIN automatically.

|   |     |   | 0.07  |  | ŧ. |      |  |  |  | VC 🛜 🗇 100% 🖁 09:12 |
|---|-----|---|-------|--|----|------|--|--|--|---------------------|
|   |     | Session   |       |  |    |      |  |  |  |                     |
| ٥ | Sma | irtVIN  |       |  |    |      |  |  |  |                     |
| 2 | Man | ual Selec   | ction |  |    | Read |  |  |  |                     |
|   |     | $\hat{\boldsymbol{\varphi}}_{ij}^{MA}$ Reading VIN number |       |  |    |      |  |  |  |                     |
|   |     |   |       |  |    |      |  |  |  |                     |
|   |     |   |       |  |    |      |  |  |  |                     |

Figure 8-9 Sample Smart VIN Screen

4. After the scan tool builds connection to the vehicle, the VIN number displays. If the Vehicle Specification or VIN code is correct, press the **OK** to continue. If incorrect, please enter a valid VIN number manually.

## 8.3.2 Manual Vehicle Selection

**Manual Selection** identifies a vehicle by making several selections according to certain VIN characters, such as model year, and engine type.

- To identify a vehicle by manual vehicle selection:
  - 1. Select **Diagnostic** from home screen of the NT650BT application.
  - 2. A screen with vehicle manufacturers displays. Select the area where the vehicle manufacturer is from. A menu of all vehicle manufacturers displays. Or tap the **Search** box to search the car you are to test.
  - 3. Choose Manual Selection option from the list.
  - 4. On each screen that appears, select the correct option until the complete vehicle information is entered and the menu of controller selection displays.

| 6 BMW 12.30.009   | A                          | ٠              | ē                     | <b>F</b>  | 2                 | VC:              | 🌩 100% 🗎      | 09:28 |               |              |               |              |                    |
|-------------------|----------------------------|----------------|-----------------------|-----------|-------------------|------------------|---------------|-------|---------------|--------------|---------------|--------------|--------------------|
| Start New Session | BMW<br>V2.30.009           | i              | A                     | ٠         | 8                 |                  |               |       | <b>VC</b> 6 🤗 | h 100% 🔒 09: | 25            |              |                    |
| SmartVIN          | Start New Session > Series |                | BWW                   |           | <b>h</b> :        | •                | ē             |       | 2             |              | <b>VC</b> 4 🤤 | 100% 🔮 09.29 |                    |
| Manual Selection  | Search History :           | Start New Sess | sion > Series > Model | setes 🔸   | 8MW<br>V2.30.009  | 0.07             | •             |       | ٠             | 8            | -             | 2            | VC' 🗢 100% 🛙 09:31 |
|                   | 1 Series                   | Search H       | listory :             | Start New | w Session > Serie | s > Model series | > Main Groups |       |               |              |               |              |                    |
|                   | 2 2 Series                 | E30            |                       | 🖬 Qu      | lick Scan         |                  |               |       |               |              |               |              |                    |
|                   | 3 Series                   | 2 E36          |                       | 2 Co      | ontrol Moc        | lules            |               |       |               |              |               |              |                    |
|                   | 4 Series                   | 3 E46          |                       |           |                   |                  |               |       |               |              |               |              |                    |
|                   | 5 Series                   | 4 E90/E        | 91/E92/E9             | 3         |                   |                  |               |       |               |              |               |              |                    |
|                   |                            |                |                       |           |                   |                  |               |       |               |              |               |              |                    |

Figure 8-10 Sample Manual Vehicle Selection Screen

# 8.4 Vehicle History

**Vehicle History** keeps records of tested vehicles and allows restarting the diagnosis of a vehicle without the need to do vehicle identification again.

- To identify a vehicle by Vehicle History:
  - 1. Select **Diagnostic** from home screen of the NT650BT application.
  - 2. Select **History** button at the top of the diagnostic page and the diagnostic records will display.



Figure 8-11 Sample History Record Screen

- 3. Choose the vehicle model you want to test from the list.
- 4. Click the Diagnostic button at the bottom bar to go to vehicle test page.

|                      | Vehicle History | Ki 🛜 100% 🖬 09:52 |
|----------------------|-----------------|-------------------|
| Title                |                 |                   |
| 3 Series_E36         |                 |                   |
| Customer Information |                 |                   |
| First Name :         | Last Name :     | Client            |
| Vehicle Information  |                 |                   |
| Year :               | VIN :           |                   |
| Brand : BMW          | Mileage :       |                   |
| Model : 3 Series_E36 | Area :          |                   |
| Sub-Model :          | Plate Number :  |                   |
|                      | Diagnostic      | Edit Delete Back  |

Figure 8-12 Sample History Record Screen

# 9 Diagnosis

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, perform special functions such as actuation and coding, and perform vehicle services and maintenance on Asia, European, China and USA vehicle brands.

## 9.1 Vehicle Identification

When you completed the identification of vehicle, you have to identify the control modules installed in the vehicle. There are two ways to identify the controllers installed in a car:

- Quick Scan
- Control Modules

|               | DEMO<br>V1.10.010 |     | A | • | B | <b>•</b> | <b>VC'o</b> 🛜 100% 🖬 09:55 |
|---------------|-------------------|-----|---|---|---|----------|----------------------------|
| Select Applic | cation > Diagno   | sis |   |   |   |          |                            |
| Quic          | k Scan            |     |   |   |   |          |                            |
| Cont          | trol Modu         | les |   |   |   |          |                            |
|               |                   |     |   |   |   |          |                            |
|               |                   |     |   |   |   |          |                            |
|               |                   |     |   |   |   |          |                            |
|               |                   |     |   |   |   |          |                            |
|               |                   |     |   |   |   |          |                            |

Figure 9-1 Sample Diagnosis Screen

#### NOTE

Not all identify options listed above are applicable to all vehicles. Available options may vary by the year, model, and make of the test vehicle.

## 9.1.1 Quick Scan

**Quick Scan** performs an automatic system test to determine which control modules are installed on the vehicle and provides 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. Press **Quick Scan** option to start.
  - 2. To pause the scan, press the **Pause** button on the screen.

| DEMO  | ⇔ ⊜ | ™ 2          | KC 🗧 🕫 100% 🖬 09:56 |
|---|-----|--------------|---------------------|
| Select Application > Diagnosis > Quick Scan | 66% |              |                     |
| System Name                                 |     | Status/Count |                     |
| AIRCON(Air conditioner)                     |     | Fault   4    | •                   |
| EPS(Motor driven power steering)            |     | Fault   8    | •                   |
| BCM(Body control module)                    |     | Fault   12   | •                   |
| ABS/ESP(ABS/ESP)                            |     | Scanning     |                     |
| VIN :<br>Car Information : DEMO             |     | Pause        | ave Report Erase    |

Figure 9-2 Sample Quick Scan Screen

3. At the end of successful automatic controller scan, a menu with a list of **DTC** displays and click ▼ button to the right to view DTC descriptions.

|                          | оемо<br>/1.10.010      |       | •               | ē                   | <b>•</b>        |                  | <b>VC</b> ? 1001 | 09:58 |  |  |
|--------------------------|------------------------|-------|-----------------|---------------------|-----------------|------------------|------------------|-------|--|--|
| Select Applicat          | on > Diagnosis > Quick | Scan  |                 |                     |                 |                  |                  |       |  |  |
| System Na                | me                     |       | Status/Count    |                     |                 |                  |                  |       |  |  |
| Engi<br>Engi             | ne(Engine con          | trol) |                 |                     | •               |                  |                  |       |  |  |
| Airbag(Airbag control)   |                        |       |                 |                     | *               |                  |                  |       |  |  |
| ID                       | Status                 |       | Description     |                     |                 |                  |                  |       |  |  |
| B1651                    | Active                 |       | Crash recorded  | in driver side airb | ag(Replace SRS  | iCM)             |                  |       |  |  |
| B1490                    | History                |       | OCS(Occupant o  | classification syst | em) defect      |                  |                  |       |  |  |
| B1388                    | History                |       | STPS(Seat track | consition sensor)   | -Driver open or | short to battery |                  |       |  |  |
| VIN :<br>Car Information | : DEMO                 |       |                 |                     |                 | Save             | Report           | Erase |  |  |

Figure 9-3 Sample Quick Scan Complete Screen

 Press Report to create an overview of installed control units and their system status, or press Save to save the report. Press Erase to clear the information.

|        |           | Ō         |      |       |     |             |                | 6            |             |             |      | 00% 📓 09:59 |
|--------|-----------|-----------|------|-------|-----|-------------|----------------|--------------|-------------|-------------|------|-------------|
|        |           | is> Quick | Scan |       |     |             |                |              |             |             |      |             |
|        |           |           |      |       |     |             |                |              |             |             |      |             |
| 1 Eng  | gine(Engi | ne c      |      |       |     |             |                |              |             |             | _    | -           |
| 2 Airl | bag(Airba | ag co     |      | e Num | ber |             |                |              |             |             |      | *           |
| ID     |           | tatus     | Colo | or    |     |             |                |              |             |             |      |             |
|        | A         | ctive     | Stat | us    |     |             | U              | nset status  |             |             | •    |             |
| B1490  | н         | istory    |      |       |     |             |                |              | ок          | Can         | ncel |             |
| B1388  | н         | istory    |      |       | STP | S(Seat trad | k position ser | nsor)-Driver | open or sho | rt to batte | N.   |             |
|        |           |           |      |       |     |             |                |              |             |             |      |             |

Figure 9-4 Sample DTC Save Screen

| ◆ DEM0<br>V1.10.010 000                            | 8 8 9              | 🔏 😤 100% 🖥 10:06 |
|--|--------------------|------------------|
| Select Application > Diagnosis > Quick Scan        |                    |                  |
| System Name  | Status/Count       |                  |
| Engine(Engine control)                             | Fault   5          | •                |
| <ul> <li>Airbag(Airbag control)</li> </ul>         | Fault   3          | *                |
| In AIRCON(Air conditioner)                         | Fault   4          | •                |
| EPS(Motor driven power steering)                   | Fault   8          |                  |
| RCM(Rody control module)  VIN: circlemation : DEMO | Fault   12<br>Save | Report Erase     |

Figure 9-5 Sample Report Screen

| DEM0<br>V1.10.010   | <b>#</b> 🖶 |                 | VC 🛜 100% 🖬 10:05 |
|---|------------|-----------------|-------------------|
| Select Application > Diagnosis > Quick Scan                 |            |                 |                   |
| System Name   |            | Status/Count    |                   |
| Engine(Engine control)                                      |            | Pass   No Fault |                   |
| Airbag(Airbag control)                                      |            | Pass   No Fault |                   |
| 3 AIRCON(Air conditioner)                                   |            | Pass   No Fault |                   |
| EPS(Motor driven power steering)                            |            | Pass   No Fault |                   |
| BCM(Body control module)     Vin:     Garliformation - DEMO |            | Pass I No Fault | Report Erase      |
| Car intormation : DEMO                                      |            |                 |                   |

Figure 9-6 Sample Erase Screen

5. When running auto scanning, you can press **Pause** and select the system you would like to test. When the scanner has established connection with the vehicle, the Function Menu displays.

| DEMO 000                                    | ٠          | ē                     | <b>*</b> |   | VC | 奈 100% 🔒 1 | 0:07 |   |                            |
|---|------------|-----------------------|----------|---|----|------------|------|---|----------------------------|
| Select Application > Diagnosis > Quick Scan |            | DEMO<br>V1.10.010     | 0.07     | A | ٠  | 8          | -    | Z | <b>VC's</b> 😤 100% 🛢 10:09 |
| System Name                                 | Select App | lication > Function I | Vienu    |   |    |            |      |   |                            |
| Engine(Engine control)                      | 1 Rea      | d Codes               |          |   |    |            |      |   |                            |
| 2 Airbag(Airbag control)                    | 2 Cle      | ar Codes              |          |   |    |            |      |   |                            |
| AIRCON(Air conditioner)                     | 3 Live     | e Data                |          |   |    |            |      |   |                            |
| EPS(Motor driven power steering)            | d ECU      | J Informati           | on       |   |    |            |      |   |                            |
| VN :<br>Cer Information : DEMO              |            |                       |          |   |    |            |      |   |                            |

Figure 9-7 Sample System's Function Menu Screen

### 9.1.2 Control Modules

**Control Modules** displays all controllers available of the vehicle manufacturer. The controllers listed on the menu do not mean that they are installed on the vehicle. It is useful for technicians who are familiar with the vehicle specifications.

### ► To select a system to test:

1. Press **Control Modules** from the menu and a controller menu displays.

| ¢             | DEM0<br>V1.10.010 | 0.0V           | A       | • | ē | • | <b>VC</b> ? 1009 | 10:10 |
|---------------|-------------------|----------------|---------|---|---|---|------------------|-------|
| Select Applie | cation > Diagnos  | is > Control N | lodules |   |   |   |                  |       |
| Search        | History :         |                |         |   |   |   | Search           | ٩     |
| Engi          | ne                |                |         |   |   |   |                  |       |
| Airba         | ag                |                |         |   |   |   |                  |       |
| 3 AIRC        | CON               |                |         |   |   |   |                  |       |
| 4 EPS         |                   |                |         |   |   |   |                  |       |
| 5 BCN         | 1                 |                |         |   |   |   |                  |       |

Figure 9-8 Sample Control Modules Screen

2. Select a system to test. When the scanner has established connection with the vehicle, the **Function Menu** displays.

|              | DEMO<br>V1.10.010 |                     | A                      | •          | 8 | - | <b>VC¦</b> 奈 100% 8 10:11 |
|--------------|-------------------|---------------------|------------------------|------------|---|---|---------------------------|
| Select Appli | cation > Diagnos  | iis > Control Modul | ies > Engine >     Fun | ction Menu |   |   |                           |
| Read         | d Codes           |                     |                        |            |   |   |                           |
| 2 Clea       | r Codes           |                     |                        |            |   |   |                           |
| 3 Live       | Data              |                     |                        |            |   |   |                           |
| 4 ECU        | Informat          | tion                |                        |            |   |   |                           |
|              |                   |                     |                        |            |   |   |                           |
|              |                   |                     |                        |            |   |   |                           |

Figure 9-9 Sample Function Menu Screen

## 9.2 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
- Clear Codes
- Live Data
- ECU Information

#### 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.

### 9.2.1 Read Codes

**Read Codes** menu lets you read trouble codes found in the control unit. There are 4 types of code status:

- Present/Permanent/Current
- Pending
- History

Present/Permanent/Current codes stored in a control module are used to help identify the cause of a trouble or troubles with a vehicle. These codes have occurred a specific number of times and indicate a problem that requires repair.

Pending codes are also referred to as maturing codes that indicate intermittent faults. If the fault does not occur within a certain number of drive cycles (depending on vehicle), the code clears from memory. If a fault occurs a specific number of times, the code matures into a DTC and the MIL illuminates or blinks.

History codes are also referred to as past codes that indicate intermittent DTCs that are not currently active. Code history is number of engine starts since DTC(s) were first detected (to see if they are current or intermittent).

### To read codes from a vehicle:

 Press Read Codes from Select Diagnostic Function menu. A code list including code number and its description displays. The red icon <sup>(2)</sup> means there is help information available for the code. The green icon <sup>(3)</sup> means there is freeze frame available.

|                                 |                   | 0.0V                            | # e                          | -               | 2                    | <b>VC</b> 6 奈 100% ₽ 10:12 |
|---------------------------------|-------------------|---------------------------------|------------------------------|-----------------|----------------------|----------------------------|
| Select Apple                    | ation > Diagnosis | > Control Modules > Engine > Fi | unction Menu > Trouble Codes |                 |                      |                            |
| ID                              |                   | Statu                           | s Desci                      | ription         |                      |                            |
| 1 <u>P00</u>                    | <u>30</u> * (     | ③ Activ                         | e HO2S                       | heater contr    | ol circuit           | bank 1 sensor 1            |
| 2 <u>P20</u>                    | 96 * (            | O Histo                         | ry Post o                    | catalyst fuel t | trim syste           | em too lean bank 1         |
| 3 <u>P01</u> :                  | <u>30</u> * (     | ② Activ                         | e O2 se                      | nsor circuit b  | oank 1 se            | nsor 1                     |
| 4 <u>P06</u>                    | <u>16</u> * (     | O Histo                         | ry Starte                    | er relay circui | t low                |                            |
| 5 PO3<br>VIN :<br>Car Informati |                   | ⊚ Activ                         | e Crank                      | shaft nositio   | n sensor<br>Freeze F |                            |

Figure 9-10 Sample Trouble Code Screen

• Freeze Frame - select one fault code from the code list and click Freeze Frame button at the bottom bar. The screen will display freeze frame detail data, a snapshot of critical vehicle operating conditions automatically recorded by the on-board computer at the time of the DTC set. It is a good function to help determine what caused the fault.

| ◆ <sup>DEMO</sup> 01,10,010 000  | <b>N</b> | KC 🕫 100% 🖬 10:14 |
|--|----------|-------------------|
| $Select \ Application > Diagnosis > Control \ Modules > Engine > Function \ Menu > Trouble \ Codes > $ | P0030    |                   |
| Name   | Value    | Unit              |
| MIL status indicator(MIL by DTC)   | OFF      |                   |
| Battery voltage  | 12.4     | V                 |
| Engine cooling fan-Low   | ON       |                   |
| Boost pressure sensor  | 2992     | hPa               |
| LAir mass flow     VIN:     car Information: DBM0  | 90       | ka/h<br>Save      |

Figure 9-11 Sample Freeze Frame Screen

• **Help** - select one fault code from the code list and click **Help** button on the screen. The screen will display the detailed descriptions about the fault code and repair guide.

| •                      | DEM0<br>V1.10.010 | 0.0V      | Â.   | •                          | Ē                            |                    | Ø                         |        | <b>VC₀</b> | ∞ 🖬 10:15 |
|------------------------|-------------------|-----------|--|----------------------------|------------------------------|--------------------|---------------------------|--------|------------|-----------|
| Select Applie          | ation > Diagno    | sis > Cor | rol Markiles - Engine - En                     | notion Manu > Tra          | ebla Padar                   |                    |                           |        |            |           |
| ID                     |                   |           |  |                            | P0030                        |                    |                           |        |            |           |
| 1 <u>P00</u> :         | <u>30</u> \$      | : 0       | [General Infor<br>The normal o                 | perating te                |                              |                    |                           |        | 1 sensor   | 1         |
| P20                    | 96 \$             | • @       | Oxygen Sense<br>1562°F). The<br>of time requir | HO2S hea<br>red for fue    | iter greatly<br>I control to | decrease<br>become | s the amou<br>active. The | e 1    | o lean bar | nk 1      |
| 3 <u>P01</u> :         | <u>30</u> \$      | • @       | PCM provides<br>adjust current<br>When the HO  | t through t<br>2S is cold, | he heater.<br>the value      | of the resi        | stance is                 |        | 1          |           |
| 4 <u>P06</u>           | 16 \$             | • ⑦       | low and the c<br>if the tempera                |                            |                              |                    | or rises, th              | e      |            |           |
| L                      |                   |           |  |                            |                              |                    | ок                        | -1     |            |           |
| 5 P03                  | 15 9              | 0         | Active   | 2                          | Cranks                       | shaff nosif        | ion sensor                | A circ | auti       |           |
| VIN :<br>Car Informati | an : DEMO         |           |  |                            |                              |                    | Freeze F                  | rame   | Help       | Save      |

Figure 9-12 Sample DTC Help Screen

- 2. Slide up and down to view additional information when necessary.
- 3. Press **Save** to store DTC information. Press 🖻 to print the information if

need be. Press 🕥 to exit.

### 9.2.2 Clear Codes

**Clear Codes** menu lets you to clear all current and stored DTCs from a selected control module. Also it erases all temporary ECU information, including freeze frame, so make sure that the selected system is completely checked and serviced by technicians and no vital information will be lost before clearing codes.

#### NOTE

- To clear codes, make sure that the ignition key is switched to ON with the engine off.
- Clear Codes does not fix the problem that caused the fault! DTCs should only be erased after correcting the condition(s) that caused them.

### To clear codes:

1. Press Clear Codes from Select Diagnostic Function menu.

|   | •     |           | DEMO<br>V1.10.010 | 0.0V              | A                      | •       | Ð | - | K 🕫 100% 🖬 10:22 |
|---|-------|-----------|-------------------|-------------------|------------------------|---------|---|---|------------------|
| S | elect | t Applica | tion > Diagnos    | sis > Control Moc | lules > Engine > Funct | on Menu |   |   |                  |
| 1 | R     | Read      | Codes             |                   |                        |         |   |   |                  |
| 2 |       | Clear     | Codes             |                   |                        |         |   |   |                  |
| 3 | L     | ive [     | Data              |                   |                        |         |   |   |                  |
| 4 | E     | ECU I     | nformat           | tion              |                        |         |   |   |                  |
|   |       |           |                   |                   |                        |         |   |   |                  |
|   |       |           |                   |                   |                        |         |   |   |                  |

Figure 9-13 Sample Function Menu Screen

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

3. Check the codes again. If any codes remain, repeat the Clear Codes steps.

### 9.2.3 Live Data

**Live Data** menu lets you view real time PID data in text and plot formats, learn good sensor data and compare them with faulty data, and record live data from a selected vehicle electronic control module.

There are two ways to select the PID data of control module:

- All Data
- Custom List

|            | DEMO<br>V1.10.010 | 0.0V              | A                      | *       | 8 | - | <b>VC_6</b> 🛜 100% 🖬 10:23 |
|------------|-------------------|-------------------|------------------------|---------|---|---|----------------------------|
| Select App | lication > Diagno | sis > Control Moc | lules > Engine > Funct | on Menu |   |   |                            |
| 1 Rea      | d Codes           |                   |                        |         |   |   |                            |
| 2 Cle      | ar Codes          |                   |                        |         |   |   |                            |
| 3 Liv      | e Data            |                   |                        |         |   |   |                            |
| 4 ECI      | J Informa         | tion              |                        |         |   |   |                            |
|            |                   |                   |                        |         |   |   |                            |

Figure 9-14 Sample Function Menu Screen

#### 9.2.3.1 All Data

All Data menu lets you view all live PID data from a selected control module.

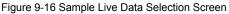
- To view all live PID data:
  - 1. Press **Select ALL** for select all live PID data and press **Deselect ALL** to deselect all items.

|    |                      | DEM0<br>V1.10.010 | 0.0V             |                       | •               | 8       | <br>Z | <b>VC</b> ' 🧟 | 00% 🖹 10:25 |
|----|----------------------|-------------------|------------------|-----------------------|-----------------|---------|-------|---------------|-------------|
| 07 | ielect Applic        | ation > Diagnos   | is > Control Mod | ules > Engine > Funct | ion Menu > Cust | om list |       |               |             |
| 1  | MIL                  | status ind        | dicator(M        | IL by DTC)            |                 |         |       |               | 0           |
| 2  | Batte                | ry voltag         | le               |                       |                 |         |       |               | 0           |
| 3  | Engir                | ne coolin         | g fan-Lov        | v                     |                 |         |       |               | 0           |
| 4  | Boos                 | t pressu          | re sensor        |                       |                 |         |       |               | 0           |
| 5  | Air m                | ass flow          |                  |                       |                 |         |       |               | 0           |
|    | VIN :<br>Car Informa | tion : DEMO       |                  |                       |                 |         |       | Select All    | ок          |

Figure 9-15 Sample Function Menu Screen

2. Press **OK** to complete the selection and all readings will be displayed in text format by default.

| 🔊 DEMO 👬 🚔 🚔 🖼 🗳  | <b>VC</b> 🖗 100 | 10:26 |
|---|-----------------|-------|
| Select Application > Diagnosis > Control Modules > Engine > Function Menu > Custom list |                 |       |
| MIL status indicator(MIL by DTC)  | 1               | 0     |
| Battery voltage   | 2               | ۰     |
| Engine cooling fan-Low  | 3               | •     |
| Boost pressure sensor   | 4               | ۰     |
| Air mass flow   | 5               | 0     |
| VN :<br>Car Information : DEMO  | Deselect        | ок    |



|                         | DEMO<br>V1.10.010 000   | = 2                   | <b>VC¦</b> 奈 100% ∎ 10:27 |
|-------------------------|---|-----------------------|---------------------------|
| Select Applica          | tion > Diagnosis > Control Modules > Engine > Function Menu > Custom li | st > Live data        |                           |
| -                       | None  | None                  | •                         |
| Text                    | Name  | Value                 | Unit                      |
|                         | MIL status indicator(MIL by DTC)  | OFF                   |                           |
| 1.                      | Battery voltage   | 12.4                  | V                         |
| Graph                   | Engine cooling fan-Low  | ON                    |                           |
|                         | Boost pressure sensor   | 3019                  | hPa                       |
| VIN :<br>Car Informatio | Help  | To Top History Record | d Save Pause              |

Figure 9-17 Sample Live Data Screen

| Name    | Description  |
|---------|--|
| Help    | To provide help information of a PID                   |
| То Тор  | To move a data line to the top of Data List screen     |
| History | To view the previous live data records or test reports |
| Record  | To make record of live data                            |
| Save    | To save live data of current frame                     |
| Pause   | To stop recording live data                            |

Table 8-1 Live Data Screen Button Screen

• Learn Mode: gives you the ability 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. Click the dropdown list at the upper left of the screen to enter to choose a working condition to learn.

|                         | DEMO<br>V1.10.010 就 🖨  | <b>•</b>              | <b>VC(</b> 🛜 100% 🛙 10:28 |
|-------------------------|--|-----------------------|---------------------------|
| Select Applic           | ation > Diagnosis > Control Modules > Engine > Function Menu > Custom list > Uve | data                  |                           |
|                         | None   | None                  | •                         |
| -                       | Learn - Idle   |                       |                           |
| Text                    | Learn - KOEO   | Value                 | Unit                      |
|                         | Learn - Acceleration   | OFF                   |                           |
|                         | Leam - Deceleration  | 10.4                  | V                         |
| l                       | Learn - Part Load  | 12.4                  | v                         |
| Graph                   | Learn - Heavy Load   | ON                    |                           |
|                         | Boost pressure sensor  | 3019                  | hPa                       |
| VIN :<br>Car Informatic | n : DEMO Help 1  | To Top History Record | d Save Pause              |

Figure 9-18 Sample Learn Mode Screen

• **Compare Mode** - If that vehicle comes in is with a problem, you can easily compare the faulty sensor and parameter readings to the good readings, and you will be alarmed when a faulty sensor reading is detected.

|                          | DEMO  | -                           |          | <b>₩C¦</b> 奈 100% 🕯 10:29 |  |  |
|--------------------------|---|-----------------------------|----------|---------------------------|--|--|
| Select Applica           | tion > Diagnosis > Control Modules > Engine > Function Menu > Custom list > Live of | iata                        |          |                           |  |  |
|                          | None  | None                        |          |                           |  |  |
| Ē                        |   | Compare - Idle              |          |                           |  |  |
| Text                     | Name  | Compare - KOEO              |          |                           |  |  |
|                          | MIL status indicator(MIL by DTC)  | DTC) Compare - Acceleration |          |                           |  |  |
|                          |   | Compare - Deceleration      |          |                           |  |  |
|                          | Battery voltage   | Compare - Part Load         |          |                           |  |  |
| Graph                    | Engine cooling fan-Low  | Compare - Heavy Load        |          |                           |  |  |
|                          | Boost pressure sensor   | 300                         | 5        | hPa                       |  |  |
| VIN :<br>Car Information | на невра то   | Top Histor                  | y Record | Save Pause                |  |  |

Figure 9-19 Sample Live Data Screen

- 3. Swipe the screen up and down to view additional information when necessary.
- 4. To move a data line to the top of Data List screen, just tap the line to select and then press the button **To Top**. To view data records or test reports, and press the button **History**. To make records of live data, just tab the button **Record**, and press **Pause** to stop recording at any time. To save the data, tap the **Save** icon.
- 5. To view live PID in graph format, press the tab **Graph**, and the plot displays. To view another PID plot, tab 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.



Figure 9-20 Sample PID Graph Screen

• **Multi-graphs:** displays the parameters in waveform graphs, giving you the 'real picture' of what's going on in the vehicle. You can view up to 4 parameter graphs simultaneously.

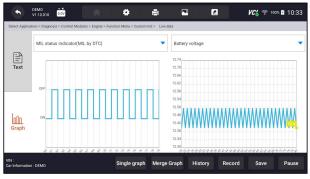


Figure 9-21 Sample Multi-graphs Screen

• **Merge Graph:** merges multiple PID plots into one coordinate, so you can easily see how they affect each other, providing you with the most comprehensive and functional look at live data possible.



Figure 9-22 Sample Merge Graph Screen

#### 9.2.3.2 Custom List

**Custom 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. Press **Custom List** from the menu to display all available parameters from the selected control module.
- The custom data stream selection screen displays. Tap the lines you wish to select. The numbers showing on the right side indicates the order of selection and the live data will show as this order.

|                     | DEMO<br>V1.10.010                |                         | ٠               | Ð       | F | VC'      |   | 10:36 |
|---------------------|----------------------------------|-------------------------|-----------------|---------|---|----------|---|-------|
| Select Appl         | ication > Diagnosis > Control Mo | dules > Engine > Functi | on Menu > Custo | om list |   |          |   |       |
| 1 MIL               | status indicator(N               | AIL by DTC)             |                 |         |   |          | 3 | •     |
| 2 Batt              | ery voltage                      |                         |                 |         |   |          | 1 | ۰     |
| Eng                 | ine cooling fan-Lo               | w                       |                 |         |   |          | 2 | 0     |
| 4 Boo               | st pressure senso                | r                       |                 |         |   |          |   | 0     |
| 5 Air r             | mass flow                        |                         |                 |         |   |          |   | 0     |
| VIN :<br>Car Inform | nation : DEMO                    |                         |                 |         |   | Select A |   | ок    |

Figure 9-23 Sample Custom List Selection Screen

- To deselect an item, tap the line again. Alternatively, tap SELECT ALL or Deselect ALL to select or deselect all items at once.
- 4. Press **OK** to complete the selection, and all selected items display.

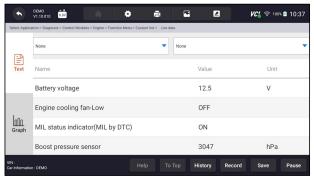


Figure 9-24 Sample Live Data Screen

#### 9.2.3.3 Record data

Data Record is for recording the running data of the current control module.

### To Record Data

1. Press **Record** button to record all selected live data, then it will show the record time and frames.

|                         | DEMO<br>V1.10.010   |           | <b>VC'a</b> 🛜 100% 🛢 10:43 |
|-------------------------|---|-----------|----------------------------|
| Select Applica          | tion > Diagnosis > Control Modules > Engine > Function Menu > Custom list > | Live data |                            |
|                         | None  | ▼ None    | •                          |
| Text                    | Name  | Value     | Unit                       |
|                         | MIL status indicator(MIL by DTC)  | ON        |                            |
| 1                       | Battery voltage   | 12.5      | V                          |
| Graph                   | Engine cooling fan-Low  | OFF       | Time: 00:00:11             |
|                         | Boost pressure sensor   | 3047      | Frame: 23<br>hPa           |
| VIN :<br>Car Informatio | Help  |           | Stop Save Pause            |

Figure 9-25 Sample Live Data Record Screen

2. Press **Stop** button to create a record, then press **OK** to save the record into Data Playback of Data Manager.

|   | DEM0<br>V1.10.010 | . +<br>10V |       |                               |             |    |      |      |     | 10:44 |
|---|-------------------|------------|-------|-------------------------------|-------------|----|------|------|-----|-------|
| Select Application > Diagnosis > Control Modules > Engine > Function Menu > Custom list > Live data |                   |            |       |                               |             |    |      |      |     |       |
| <b>A</b> III  | None              |            |       |                               |             |    |      |      |     | •     |
| Text  |                   |            |       |                               |             |    |      |      |     |       |
|   | MIL statu         | i au       |       | 20210626-1043<br>ask me again | 05          |    |      |      |     |       |
|   | Battery v         | olt        | -     | reset it in "Setting          | gs>General" |    |      |      | V   |       |
| Graph   | Engine co         | 00         |       |                               |             | ок | Ca   | ncel |     |       |
|   | Boost pre         | essure s   | ensor |                               |             | 3  | 8019 |      | hPa |       |
|   |                   |            |       |                               |             |    |      |      |     | Pause |

Figure 9-26 Sample To Stop Live Data Record Screen

### 9.2.4 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. Press ECU Information from Select Diagnostic Function menu.

| Select Application > Diagnosis > Control Modules > Engine > Function Manu  Read Codes | ФЕМО<br>V1.10.010 0.000 🔒                                   | * ⊜           | • | VC 🛜 100% 🖬 10:45 |
|---|---|---------------|---|-------------------|
| Read Codes  | Select Application > Diagnosis > Control Modules > Engine > | Function Menu |   |                   |
|   | Read Codes  |               |   |                   |
| 2 Clear Codes   | 2 Clear Codes   |               |   |                   |
| Live Data   | 3 Live Data   |               |   |                   |
| ECU Information   | ECU Information   |               |   |                   |
|   |   |               |   |                   |

Figure 9-27 Sample Function Menu Screen

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

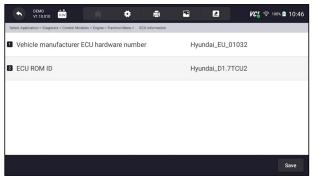


Figure 9-28 Sample ECU Information Screen

- 3. Press  $\blacksquare$  to print the information if need be. Press  $\bigcirc$  to exit.
- 4. Press **Save** to store ECU information screen and Press **OK** to complete save or Press **Cancel** to give up.



Figure 9-29 Sample ECU Information save Screen

# 9.3 Complaints

This function lets the customers sending back the complaints or feedback to Foxwell server with one touch during the diagnostic process and allows for quicker and more accurate fixes for diagnostic troubles and bugs.

To make a complaint:

1. Click 🖄 during the diagnostic process when face a failure.

| DEMO 050 050 0  | 8 | •                  | <b>VC'_</b> 🧟 10% 🗍 08:28 |  |  |  |
|---|---|--------------------|---------------------------|--|--|--|
| Select Application - Diagnosis - Quick Scan                   |   |                    |                           |  |  |  |
| System Name   |   | Status/Count       |                           |  |  |  |
| Engine(Engine control)  |   | Fault   5          | •                         |  |  |  |
| Airbag(Airbag control)  |   | Fault   3          | •                         |  |  |  |
| AIRCON(Air conditioner)                                       |   | Fault   4          | •                         |  |  |  |
| EPS(Motor driven power steering)                              |   | Fault   8          | •                         |  |  |  |
| RCM(Rody control module)      VIN:     Car Information : DEMO |   | Fault   12<br>Save | Report Erase              |  |  |  |

Figure 9-30 Sample Compliant Button Screen

2.Input the necessary information in the complaint sheet. And the data logging file will be collected automatically.

|                      | Complaints           |                    |                   |                | <b>VC'</b> ?? 93 | 08:28 |
|----------------------|----------------------|--------------------|-------------------|----------------|------------------|-------|
| Error Type Selection | ı                    |                    |                   |                |                  |       |
| 2021-07-01_08-28-03[ | VIN reading error]   |                    |                   |                |                  |       |
| VIN reading error    | Make / Model error   | Decoding VIN error | Active Test error | System Comm    | unication error  |       |
| Reading Codes error  | Clearing Codes error | Data Stream error  | Special Function  | n error Transl | lation error     |       |
| Any other error      |                      |                    |                   |                |                  |       |
| Description & Rema   | rks                  |                    |                   |                |                  |       |
| failed to read       |                      |                    |                   |                |                  |       |
|                      |                      |                    |                   |                |                  |       |
| _                    |                      |                    |                   |                |                  | -     |
|                      |                      |                    | Save Upload       | Email          | PDF              | Back  |

Figure 9-31 Sample Compliant Sheet Screen

3.Press **Upload** to send to Foxwell server directly when connecting with Wifi or Press **Save** to save the complaint and send to us later.(The saved complaint can be found at **Data Manager--Data Record** menu.) Press **Email** to share or **PDF** to print. And press **Back** to cancel.

# **10 Maintenance**

This section gives brief instructions of the most commonly required service and maintenance operations. Typical service operation screens are a series of menu driven executive commands. Follow on-screen instructions to complete the operation.

Available service and maintenance options include:

- Oil Light Reset
- EPB Service
- DPF Regeneration
- TPS/TBA

- SAS Calibration
- TPMS Relearn
- Injector coding
- ABS Bleeding

# 10.1 Oil Reset

**Oil Reset** menu allows you to reset the service lamps on the instrument cluster. The Service Indicator System is designed to alert the driver when the vehicle is due for a service.

Oil service reset methods are determined by the vehicle being tested. Depending on the vehicle being tested, any of the following means displays:

- Oil Reset with One Button applicable to GM models only. It offers quick and simple oil service reset with the click of one button.
- Manual Reset almost all Asian vehicles and most American and European vehicles have mechanical oil service indicator reset. The service tool does not have to communicate with the vehicle being tested, but guides you to complete the service manually by providing step-by-step on-screen instructions.

When Manual Reset is selected and the vehicle being tested identified, a procedure opens on the screen. Scroll with arrow keys to read the entire procedure and performing the necessary steps as directed by the on-screen instructions. The exact order of the test operation steps may vary depending on the test vehicle. Be sure to follow all on-screen instructions. The manual reset procedure can be interrupted and aborted if the ignition key position is changed.

• Auto Reset - Auto Reset is a bi-directional communication procedure directed by the service tool. The service tool displays guides for you through the process. A number of instructions that require a response to continue display, including an option to clear any stored codes once the interval has been reset. Follow the on-screen instructions.

# 10.2 Electronic Parking Brake (EPB) Service

**EPB Service** menu allows you to perform the service and maintenance of brake systems, including deactivation and activation of the brake control system, bleeding brake fluid, opening and closing brake pads, and setting brakes after disc or pad replacement, on multiple brands of vehicles where electronic brake systems are fitted.

Some tests display a command to the operator. For example, if "Pressing Brake Pedal" displays, the operator has to press and hold the brake pedal and then continue. Actual tests vary by vehicle manufacturer, year, make.

Typical special test options include:

- Deactivate/Activate SBC/EPB systems allows to deactivate brakes for further service or maintenance work on brake systems or activate brakes when service or maintenance work on brake systems are completed.
- Adaptation on Audi A8 allows to set new pad thickness of rear brakes calipers after changing brake discs & pads on Audi A8 models.
- Replace hydraulic brake systems fluid/bleed brake system on Mercedes SBC vehicles allows to change brake fluid/bleed brake system.
- Perform service reset and service position on BMW EPB vehicles allows to do the CBS reset and CBS correction for front brake and rear brake.
- **Perform activation/service work on Volvo PBM vehicles** allows to perform installation check, applying parking brake, releasing parking brake, activating service mode and exiting service mode.
- Reset memory on Toyota EPB vehicles allows to clear the learned memory of the EPB ECU.
- Perform brake cable replacement and electric parking brake replacement allows to fit in or remove the brake cable safely, adjust brake cable's tension and calibrate the electric parking brake replacement.
- Save and write clutch pedal programming on Renault EPB vehicles allows to save clutch pedal programming on Renault vehicles fitted with manual gearbox. After this command is activated, the tool allows to "flash" the electric parking brake unit with the saved clutch data.
- Perform control function and reset function on Opel EPB vehicles allows to apply/release park brake cable service, provide park brake cable service replacement procedures and calibrate the parking brake systems after brake service.
- Sensor calibration on Honda EPB vehicles allows to program the current output value of each sensor into the electric parking brake unit.
- Provides parking brake unjam procedure and perform longitudinal accelerometer calibration on Land Rover EPB vehicles allows to drive the electronic park brake so it is unjamed in the releasing direction and then drive it into mounting position or the latching position; also allows to perform longitudinal accelerometer calibration.

#### 

- EPB systems must be deactivated before carrying out any maintenance/service work on the brakes such as changing of pads, discs and calipers.
- Use proper tools to avoid the risk of body injuries of mechanics and technicians and damage to the brake system.
- Make sure the vehicle is properly blocked after deactivation of the systems.

# 10.3 Diesel Particulate Filter (DPF) Regeneration

**DPF Regeneration** menu lets you perform the DPF cleaning to clear the blockage through continuous burning of the particulates captured in the DPF filter. When a DPF regeneration cycle is completed, the DPF light automatically goes off.

# 10.4 Throttle Body Alignment (TPS/TBA)

It's very common to see a customer pull into the shop with a Volkswagen or Audi that just will not idle correctly. One of the possible causes is that the throttle position is not known. When the motion range is not known, the ECU simply has no idea where to set the throttle. The ECU must know the full range of motion of the throttle in order for it to properly control the engine. Using the throttle position sensors in the throttle body, the ECU learns the full open and full closed positions through various states (idle, part throttle, WOT) known as a Throttle Body Alignment (TBA).

# 10.5 Steering Angle Sensor (SAS) Calibration

**SAS Calibration** menu lets you perform calibration of the Steering Angle Sensor, which permanently stores the current steering wheel position as straight-ahead in the sensor EEPROM. On successful calibration of the sensor, its fault memory is automatically cleared.

### 10.6 TPMS Relearn

After the tire pressure MIL turns on and maintenance is performed, the tire pressure resetting function must be performed to reset tire pressure and turn off the tire pressure MIL.

# 10.7 Injector Coding

Write injector actual code or rewrite code in the ECU to the injector code of the corresponding cylinder so as to more accurately control or correct cylinder injection quantity. After the ECU or injector is replaced, injector code of each cylinder must be confirmed or re-coded so that the cylinder can better identify injectors to accurately control fuel injection.

# 10.8 ABS Bleeding

Anytime the brake system is opened to replace components such as calipers, wheel cylinders, the master cylinder, or brake lines or hoses, air gets inside. The air has to be removed by bleeding the brakes if you want a firm brake pedal. Air trapped in the lines, calipers or wheel cylinders will make the pedal feel soft and spongy. Air is compressible, so when the brakes are applied any air bubbles in the system must first be compressed before the hydraulic fluid will transmit pressure to apply the brakes.

# 11 Data Manager

**Data Manager** menu let you review stored screenshots and test reports, playback recorded live data and other saved files.

Typical menu options include:

- Image
- PDF
- Data Playback
- Data Record
- Report

| •             | Data Manager | <b>VC6</b> 🤶 100% 🖬 10:59 |
|---------------|--------------|---------------------------|
| Image         |              | >                         |
| PDF           |              | >                         |
| Data Playback |              | >                         |
| Data Record   |              | >                         |
| E Report      |              | >                         |
|               |              |                           |
|               |              |                           |

Figure 11-1 Sample Data Manager Screen

### 11.1 Image

**Image** option leads to screens for review of stored screenshots. In case a failure of NT650BT application or the Android system occurs, please just take a screenshot and send it to our team to help with the troubleshooting.

Typical menu options include:

- Diagnostic Screenshot
- System Screenshot

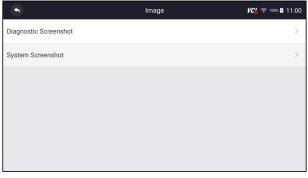


Figure 11-2 Sample Screenshots type

### 11.1.1 How to Save an Image

- ▶ To take a screenshot:
  - 1. If want to save data of current screen, press 🔳 at the title bar to take a screenshot.

|              | DEMO<br>V1.10.010 | 0.0V            | •       | ٠ | 8 | - | Z | <b>VC</b> 🖗 1001 | 11:01 |
|--------------|-------------------|-----------------|---------|---|---|---|---|------------------|-------|
| Select Appli | cation > Diagnos  | iis > Control N | lodules |   |   |   |   |                  |       |
| Search       | History :         |                 |         |   |   |   |   | Search           | ٩     |
| Eng          | ine               |                 |         |   |   |   |   |                  |       |
| 2 Airb       | ag                |                 |         |   |   |   |   |                  |       |
| 3 AIR        | CON               |                 |         |   |   |   |   |                  |       |
| 4 EPS        |                   |                 |         |   |   |   |   |                  |       |
| 5 BCN        | 1                 |                 |         |   |   |   |   |                  |       |

Figure 11-3 Sample Screenshot Screen

2. Add a description of the image, and press the OK to save or press cancel button to give up.

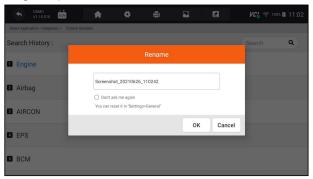


Figure 11-4 Sample Screenshot Screen 54 NT650BT User's Manual V1.0

### 11.1.2 Review Image

- To review the screenshots:
  - 1. Press **Data Manager** from home screen of NT650BT diagnostic application.
  - 2. Press Image from Data Manager.
  - Press Diagnostic Screenshot for application menu screenshot or Press System Screenshot for system menu screenshot, then all available pictures will be displayed.

| •                                      | Diagnost   | ic Screenshot | Ki 🕫 100% 🖬 11:03 |
|--|--|---------------|-------------------|
| 50000000000000000000000000000000000000 | A manufacture of the second se |               |                   |
|  |  |               | Back              |

Figure 11-5 Sample Browse Picture Screen

- 4. Press any available picture for review.
- 5. To delete a picture, tap button **Delete** and answer **OK** to delete. Press **Print** to print the pictures and press **Rename** to change the picture name.

| •   | Diagno                   | stic Screenshot     | <b>VC6</b> 🗟 10             | ∞≋ 🖻 11:04 |
|---|--------------------------|---------------------|-----------------------------|------------|
| 0EM0<br>V1.10.010                         | _                        | 8 8 8               | <b>VC'</b> ₀ 奈 100% 🕯 11:00 |            |
| Select Application > Diagr<br>System Name | nosis > Quéck Scan       | 55%<br>Status/Count |                             |            |
| Airbag(Airl                               | bag control)             | Fault   3           |                             |            |
| AIRCON(A                                  | ir conditioner)          | Fault   4           | •                           |            |
| EPS(Moto                                  | r driven power steering) | Fault   8           | •                           |            |
| BCM(Body                                  | r control module)        | Scanning            |                             |            |
| VIN :<br>Car Information : DEMO           |                          | Pause Sar           | ve Report Erase             |            |
|   |                          | Print               | Rename Delete               | Back       |

Figure 11-6 Sample Edit Picture Screen

6. Long press one of the pictures to edit all pictures like Rename or Delete.

| •                             |                        | Diagn      | ostic Screensho | t | <b>VC¦</b> | ns 🖻 11:0 |
|-------------------------------|------------------------|------------|-----------------|---|------------|-----------|
| 575.8 • • • • • 9 str-am      | S No. 6                |            |                 |   |            |           |
| fex.                          | B Analytestern)        | Part 2     |                 |   |            |           |
| 454                           | · AND CALORIDA         | Taki A     |                 |   |            |           |
| 8004                          | B (FERRE FOR SHARE)    | No. 1      |                 |   |            |           |
|                               | · Station, same manual | seren.     |                 |   |            |           |
|                               | 5                      | And Inc.   | April Date:     |   |            |           |
| preenshot_20210626_110242.png | Screenshot_20210626    | 110018.png |                 |   |            |           |
|                               |                        |            |                 |   |            |           |
|                               |                        |            |                 |   |            |           |
|                               |                        |            |                 |   |            |           |
|                               |                        |            |                 |   |            |           |

Figure 11-7 Sample All Pictures Edit Screen

# 11.2 PDF Report

**PDF** option leads to screens for review of the vehicle test reports. You just need to press the PDF icon on the test screen, add a description and press **OK** button to save.

### 11.2.1 How to Create a PDF Report

- To create a PDF report:
  - 1. Press **Data Manager** from home screen of NT650BT diagnostic application.
  - 2. Press Report from Data Manager.
  - 3. Press any reports saved.

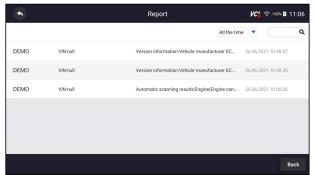


Figure 11-8 Sample of Reports Screen

4. Press Save to save changes. Press PDF to create PDF file.

|   | Report     | <b>KC</b> 奈 100% 🛙 11:08 |
|---|------------|--------------------------|
| Vehicle Information                                   |            |                          |
| Make: DEMO  | VIN:       | Plate Number:            |
| Model:  | Mileage:   | Color:                   |
| Year:   | Capacity:  | Status: Pre Scan         |
| Engine:   | Reference: | Date: 26.06.2021         |
| Automatic scanning results                            |            | Status/Count             |
| Car Information : DEMO<br>Current Version : V1.10.010 |            | Save PDF Cancel          |

Figure 11-9 Sample of Report edit Screen

5. If press PDF, the PDF review screen will be displayed. Press **Print** to print the report or press **Email** to share the report.

| • | DEMO | )-AutoS                       | can-202             | 10626-110909              | .pdf  | KC 🕫 🕫 100% 🕯 11:09 |
|---|------|-------------------------------|---------------------|---------------------------|-------|---------------------|
|   |      |                               | Vehicle Diagnost    | ic laport Poxwell.        |       |                     |
|   |      | Vehicle Information           | <b>m</b>            | For Social                |       |                     |
| i |      | Alashi .                      | Maap                | Color:                    |       |                     |
|   |      | THE                           | Casarine            | Tomo Pre Scen             |       |                     |
| 1 |      | Engine                        | Topice:             | Date 2023-04-28           |       |                     |
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|   |      | the state grade of sources    |                     | Aut ( )                   |       |                     |
|   |      | EL-IPCIP processing           | -                   | fact ( 4                  |       |                     |
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|   |      | R. K. Stallandy converse on   | and a second        | Real (12                  |       |                     |
|   |      | 66.005.0399.851575            |                     | Real ( M                  |       |                     |
|   |      | 63 (masylmus)                 |                     | Team ( 20                 |       |                     |
|   |      | GE AND (SHE CANNY)            |                     | front 28                  |       |                     |
|   |      | di Stilleur parlety           | anis' systemi       | Read ( )                  |       |                     |
|   |      | Engine(Engine cos             | (oran               |                           |       |                     |
|   |      | 10 1                          |                     |                           |       |                     |
|   |      | 1000                          | One Hill have serve | seuriture) sense (        |       |                     |
|   |      | 70094 10                      | dag Net onlys he'ro | a Alaton (ale stat parte) |       |                     |
|   |      | 10.16                         | Cherry and he       | in' server'               |       |                     |
|   |      |                               |                     |                           | Print | Email Back          |

Figure 11-10 Sample of Report edit Screen

### 11.2.2 Review PDF Report

- ▶ To review the PDF reports:
  - 1. Press **Data Manager** from home screen of NT650BT diagnostic application.
  - 2. Press PDF and all available PDF files will be displayed.



Figure 11-11 Sample Browse PDF Screen 57

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3. Long press the screen to edit all PDF files like Rename or Delete the files.

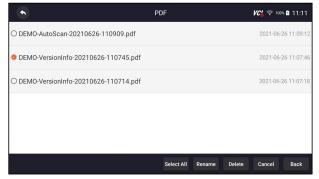


Figure 11-12 Sample Edit PDF Screen

## 11.3 Data Playback

The **Data Playback** option leads to screens for review of recorded live data. Playing back a recording is just like using the scan tool on a live vehicle. It let you review live data in text, graph and graph merging formats. Playback speed and direction (forward or reverse) can also be controlled.

### To review recorded live data:

- 1. Press **Data Manager** from home screen of NT650BT diagnostic application.
- 2. Press Data Playback and all available records display.

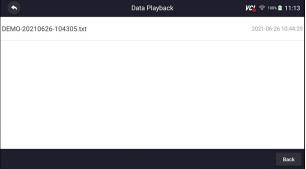


Figure 11-13 Sample Data Playback Records Screen

3. Press any records to view the details.

| •                                | Data Playback | KC 🗟 🗇 100% 🖻 11:14 |
|----------------------------------|---------------|---------------------|
| MIL status indicator(MIL by D)   | FC)           | 0                   |
| Battery voltage                  |               | 0                   |
| Engine cooling fan-Low           |               | 0                   |
| Boost pressure sensor            |               | 0                   |
| S Air mass flow                  |               | 0                   |
| 6 Accelerator nedal position ser | Isor          | 0                   |
|                                  | Select All    | Deselect OK Back    |

Figure 11-14 Sample Data Playback Selections Screen

4. To view parameter graphs, press the **Graph** tab. And to merge the graphs, press the tab **Merge Graph** or press the tab **Multi Graph** to view multiple plots.



Figure 11-15 Sample Graph Screen

- 5. To move forward or reverse back of the playing, just drag the progress bar forward or reverse. Press the II button to stop.
- 6. Long press the record to **Rename** or **Delete** the records.

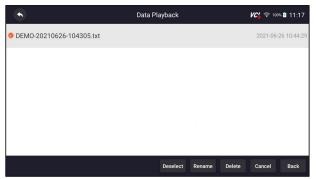


Figure 11-16 Sample Edit Data Playback Screen

# 12 Settings

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

When Settings application is selected, a menu with available service options displays. Menu options typically include:

- Unit
- Language
- Font Size
- Module Sorting
- Sort Tiles
- Remote control
- Automatic Update
- System Settings
- General
- Uninstall Vehicle Software
- Clear app data
- Print Settings
- About

# 12.1 Units

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

- To change the unit setup:
  - 1. Press Settings from home screen of the NT650BT diagnostic application.
  - 2. Press Unit and available unit system display.
  - 3. Select a unit system.

# 12.2 Language

Select Language opens a screen that allows you to choose system language.

- To configure system language:
  - 1. Press **Settings** from home screen of the NT650BT diagnostic application and select **Language**. Then all available language options display.
  - 2. Select your preferred language to change.

# 12.3 Font Size

This option allows you to change the font size of application.

▶ To change font size:

- 1. Press **Settings** from home screen of the NT650BT diagnostic application, and then select **Font Size**.
- 2. Select your preferred font size, then press **Confirm** to change, or press **Back** to give up.

# 12.4 Module Sorting

This option allows you to modify the display order of other modules except the diagnostic module in the home screen of NT650BT diagnostic application.

To change module sorting:

1. Press **Settings** from home screen of the NT650BT diagnostic application, and then select **Module Sorting**.

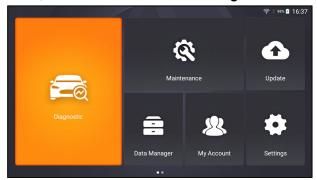


Figure 12-1 Sample Before the modification,

the Update Module is displayed behind the Maintenance module



Figure 12-2 Sample Before the modification,

the Update Module is displayed behind the Maintenance module

2.Long press the icon  $\equiv$  on the right side of the module that needs to be modified for about 2 seconds, and then drag it up and down. The final position of the module is the same as the display order of the home screen.

|   |                | Module Sorting | 🚜 🗟 🕯 🤐 🖥 16:38 |
|---|----------------|----------------|-----------------|
| Ű | Diagnostic     |                |                 |
| â | Maintenance    |                | =               |
| ۵ | Update         |                | =               |
|   |                |                |                 |
| 8 | Data Manager   |                | =               |
| & | My Account     |                | $\equiv$        |
| * | Settings       |                | $\equiv$        |
|   | Demote Control |                |                 |

Figure 12-3 Sample Drag the Update module to the front of the Maintenance module

|            |                | Module Sorting | <b>VC6</b> 🛜 🕯 98% 🖬 16:38 |
|------------|----------------|----------------|----------------------------|
|            | Diagnostic     |                | =                          |
| ۵          | Update         |                | =                          |
| \$         | Maintenance    |                | $\equiv$                   |
| â          | Data Manager   |                | $\equiv$                   |
| \$         | My Account     |                | =                          |
| •          | Settings       |                | =                          |
| <b>a</b> 2 | Domoto Control |                |                            |

Figure 12-4 Sample Release and Dwell Update Module

3. Click S to display whether to apply the current settings interface, click OK to apply the current changes, click Cancel to discard the current changes.

| £ |                | VC' 🗟 🕸 197% 🖬 1        |    |        |  |   |
|---|----------------|-------------------------|----|--------|--|---|
|   | Diagnostic     |                         |    |        |  |   |
| ۵ | Update         |                         |    |        |  |   |
| Ŕ | Maintenance    | Apply current settings? |    |        |  |   |
| â | Data Manage    | · ++ )                  | ок | Cancel |  |   |
| * | My Account     | _                       |    |        |  |   |
| * | Settings       |                         |    |        |  |   |
|   | Demosto Contra | al                      |    |        |  | _ |

Figure 12-5 Sample Click OK to apply the current changes

|            | Upo          | late       | ়ি া 16:37<br>হিই<br>Maintenance |
|------------|--------------|------------|----------------------------------|
| Diagnostic | Data Manager | My Account | Settings                         |
|            | ••           |            |                                  |

Figure 12-6 Sample After the modification, the Update module is displayed in front of the Maintenance module

# 12.5 Sort Tiles

This option allows you to change the sort for Brand of vehicles. There are two sorting methods available by alphabet or by frequency of use.

- ▶ To change sort
  - 1. Press **Settings** from home screen of the NT650BT diagnostic application, and select **Sort Tiles**.
  - 2. Select your preferred sort order.

### 12.6 Remote control

This option allows you to select a tool of remote control. There are two remote tools available TeamViewer QuickSupport or AnyDesk.

- To change remote control
  - 1. Press **Settings** from home screen of the NT650BT diagnostic application, then select **Remote control**.
  - 2. Select your preferred tool.

## 12.7 Automatic Update

This option allows you to enable/disable automatic update notice. If it is enabled, an orange update mark will show on the upper right of the diagnostic software icon whenever there is a new version available.

# 12.8 System Settings

This option provides you a direct access to the Android system settings, like sound, display, system security and etc. Refer to Android documentation for more information.

## 12.9 General

This option lets you to turn on/off the prompt when saving a file or login & registration when started the scanner.

## 12.10 Uninstall Vehicle Software

This option allows you to uninstall the vehicle software installed in the scanner.

- To uninstall a vehicle software:
  - 1. Tap Settings application on home screen of NT650BT.
  - 2. Tap the Uninstall Vehicle Software option on the option list.
  - 3. Choose the vehicle software you want to delete or choose Select All.

|            | Uni         | KC 🗇 💈 37% 🛱 04:22 |                     |               |
|------------|-------------|--------------------|---------------------|---------------|
| ABARTH     | ACURA       | ALFA               | ASTONMARTIN         | AUDI          |
| BAICHUANSU | O BAICMOTOR | O<br>BAICSENOVA    | BAICWEIWANG         | BENTLEY       |
| ØBJEV      | BMW         | BRILBMW            | BRILLIANCE          | BUGATTI       |
|            |             |                    | Settings Select All | l Delete Back |

Figure 12-7 Sample Uninstall Vehicle Software Screen

4. Press Cancel to quit or and press OK to uninstall.

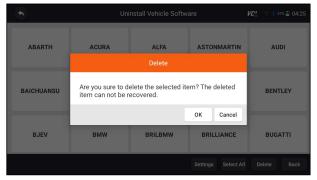


Figure 12-8 Sample Uninstall Vehicle Software Screen

# 12.11 Clear app data

Generally, after the application running for a period of time, some cache data will be generated. As time goes by, the cached data will become larger and larger, which will affect the operation of the device. This option allow you to clear the cache data of the app.

# 12.12 Print Settings

This option allows you to print any data or information anywhere and anytime either via PC network or Wi-Fi.

- To setup the printer connection:
  - 1. Tap the Settings application on home screen of NT650BT.
  - 2. Tap the Printing Settings option on the option list.

|                            | Settings | VCi | 宗 💲 37% 🖻 04:30 |
|----------------------------|----------|-----|-----------------|
|                            |          |     |                 |
| System Settings            |          |     | >               |
| General                    |          |     | >               |
| Uninstall Vehicle Software |          |     | >               |
| Slear app data             |          |     | 2.38 MB >       |
| Print Settings             |          |     | >               |
| (i) About                  |          |     | >               |

Figure 12-9 Sample Print Settings Screen

3. Tap **Print Plugin Manager** and turn on the Mopria Print Service, then NT650BT will search for available printers automatically.

| ×        | Print Service Manager   | ?        |
|----------|---|----------|
| You need | a Print Service Plugin installed & enabled to print.          |          |
| moprio   | Mopria Print Service<br>Mopria Alliance                       | Enabled  |
| (pp      | HP Print Service Plugin<br>HP Inc.                            | <u>+</u> |
| trother  | Brother Print Service Plugin<br>Brother Industries, Ltd.      | <u>+</u> |
| SAMSUNG  | Samsung Print Service Plugin<br>Samsung Electronics Co., Ltd. | <u>+</u> |
| Canon    | Canon Print Service<br>Canon Inc.                             | <u>+</u> |
| EPSON    | Epson Print Enabler<br>Selko Epson Corporation                | <u>+</u> |

Figure 12-10 Sample Print Service Manager Screen

4. Select Mopria Print Service. Press ○ for return.

| ÷ | Printing              | ۹ |
|---|-----------------------|---|
|   | Print services        |   |
| • | Mopria Print Service  |   |
| Ð | Default Print Service | 0 |
|   |                       |   |
|   |                       |   |
|   |                       |   |
|   |                       |   |

Figure 12-11 Sample Setting of Print Service Manager Screen 5. Choose the right printer. Press O for return.

| ÷        | Mopria Print Service                              | ۹ : |
|----------|---|-----|
|          | On  | •   |
|          | HP LaserJet MFP M227fdw (6239A9)<br>192.168.6.107 | 0   |
| •        | HP LaserJet Pro M329 [F72A0B]<br>192.168.14.24    |     |
| <b>1</b> | DIRECT-0C-HP M329dw LJ<br>fa:0d:ac:f7:2a:0c       |     |
|          |   |     |
|          |   |     |
|          |   |     |

Figure 12-12 Sample of Printer Screen

6. Select a available printer, then press **PRINT TEST PAGE** button at the right-bottom. Press ○ for return.



Figure 12-13 Sample of Printer test

7. Choose the file or report you want to print and press the print icon<sup>(G)</sup>. Click on the red marked part to select an available printer. Click the blue marked part to make more settings for the printer, such as paper size, number of copies, etc.

| 192.168.14.2   | 24                  |              |         |  |           |   |                               |          |      |   |                                 |          |
|--|---------------------|--------------|---------|--|-----------|---|-------------------------------|----------|------|---|---------------------------------|----------|
|  |                     |              |         |  |           |   |                               |          |      |   |                                 |          |
| oies: 1 F  | aper size:          | SO A.        | 1       |  |           |   |                               |          |      |   |                                 |          |
| JICS. I F  | aper size.          | 30 A         | •       |  | _         |   |                               |          |      |   |                                 |          |
|  |                     |              |         |  |           |   |                               |          |      |   |                                 |          |
|  |                     |              |         |  | ~         |   |                               |          |      |   |                                 |          |
|  |                     |              |         | _  | _         |   |                               |          |      |   |                                 |          |
|  |                     |              |         |  |           |   |                               |          |      |   |                                 |          |
|  |                     |              |         |  |           |   |                               |          |      |   |                                 |          |
|  |                     |              |         |  |           |   |                               |          |      |   |                                 |          |
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| here block   | Inc. Science and in | 100          |         |  | 100       |   |                               |          | 640  |   |                                 |          |
|  |                     | 100          |         |  | 100       |   |                               |          |      |   |                                 |          |
| Admath contrig with  |                     | 1.00         |         |  | 844       |   |                               |          | 5.00 |   |                                 |          |
| Canada Salara  | Report Coast        | 10000        |         |  | 585       |   |                               |          | 68   |   |                                 |          |
|  |                     |              |         |  | 844       |   |                               |          | 5.00 |   |                                 |          |
|  |                     |              |         | terra and the second   | 844       |   |                               |          | 100  | - |                                 |          |
|  |                     |              |         |  | 663       |   |                               |          |      |   |                                 |          |
|  |                     |              |         |  | 100       |   |                               |          | 646  |   |                                 |          |
|  |                     |              | 100     |  | 665       |   |                               |          |      |   |                                 |          |
|  |                     | -            |         |  | 553       |   |                               |          | -    | - |                                 |          |
|  |                     | Englander of | -       | press  | 100       |   |                               |          | 100  |   |                                 |          |
| and the second sec   |                     | 10.000       | inter . | Terrapise  | 100       |   |                               |          |      | - |                                 |          |
|  |                     | -            |         |  | -         | - |                               |          |      |   |                                 |          |
| Individuality sectored   |                     | 123          |         |  |           |   | A                             |          | THE  |   |                                 |          |
| and the second se  |                     | 128          |         |  | 10        |   | him similar in                | _        | 1000 |   |                                 |          |
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| the state of the s |                     | 528          |         | In second of the second second   |           |   |                               |          | 5.00 | - | Number of some large single for |          |
|  |                     | _            | _       |  |           | _ |                               |          | -    | - |                                 | _        |
|  |                     |              |         | 2/8 📀  |           |   |                               |          |      |   |                                 |          |
|  |                     |              |         |  |           |   |                               |          |      |   |                                 |          |

Figure 12-14 Sample of File Printing Screen

#### NOTE

- 1. Please make sure the printer and the NT650BT in the same Wi-Fi or Network when printing.
- 2. If Mopria Print Service driver can't workable for your printer, please download the driver to work for your printer on Print Service Manager.

# 12.13 About

Selecting **About** option opens a screen that shows information about the NT650BT, such as serial number, hardware and software version and etc.

To view information of your scan tool:

- 1. Press About from home screen of the NT650BT diagnostic application.
- 2. A screen with detailed information of the scanner displays.

|                          | About | KC 🗧 🕫 🕫 06:11 |
|--------------------------|-------|----------------|
| Product Model            |       | NT650EliteII   |
| Hardware Version         |       | V2.01.002      |
| Software Version         |       | V1.08.018      |
| Operating System Version |       | 1.0.5          |
| Serial Number            |       | 10050          |
| Production Date          |       | 2021-06-22     |
|                          |       |                |

Figure 12-15 Sample Tool Information Screen

# **13 Remote Support**

Remote Control enables you to get remote support from Foxwell with TeamViewer when you have issues with Foxwell products.

There are two remote control tools TeamViewer QuickSupport and Any Desk. About how to set the tool of default, please refer to 12.6 Remote control.

To use QuickSupport for to remote control:

1. Click the **Remote Control** icon on the main menu of the NT650BT to start TeamViewer QuickSupport. Press ○ for return.

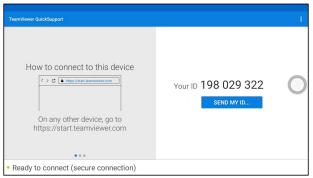


Figure 13-1 Sample QuickSupport Screen

2. Send your ID to us to let our team to take control your tablet.