
Trademarks

FOXWELL is trademark of Shenzhen Foxwell Technology Co., Ltd.
All other marks are trademarks or registered trademarks of their respective holders.

Copyright Information

©2014 Shenzhen Foxwell Technology Co., Ltd.

All rights reserved.

Disclaimer

The information, specifications and illustrations in this manual are based on the latest information available at the time of printing.

Foxwell reserves the right to make changes at any time without notice.

Visit our website at:

www.foxwelltech.com

For Technical Assistance, send us email at

support@foxwelltech.com

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.com 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.

5 ANY IMPLIED WARRANTY OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE OR USE, SHALL BE LIMITED TO THE DURATION OF THE FOREGOING LIMITED WRITTEN WARRANTY. OTHERWISE, THE FOREGOING LIMITED WARRANTY IS THE CONSUMER'S SOLE AND EXCLUSIVE REMEDY AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. FOXWELL SHALL NOT BE LIABLE FOR SPECIAL,

INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOSS OF ANTICIPATED BENEFITS OR PROFITS, LOSS OF SAVINGS OR REVENUE, LOSS OF DATA, PUNITIVE DAMAGES, LOSS OF USE OF THE PRODUCT OR ANY ASSOCIATED EQUIPMENT, COST OF CAPITAL, COST OF ANY SUBSTITUTE EQUIPMENT OR FACILITIES, DOWNTIME, THE CLAIMS OF ANY THIRD PARTIES, INCLUDING CUSTOMERS, AND INJURY TO PROPERTY, RESULTING FROM THE PURCHASE OR USE OF THE PRODUCT OR ARISING FROM BREACH OF THE WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT, OR ANY OTHER LEGAL OR EQUITABLE THEORY, EVEN IF FOXWELL KNEW OF THE LIKELIHOOD OF SUCH DAMAGES. FOXWELL SHALL NOT BE LIABLE FOR DELAY IN RENDERING SERVICE UNDER THE LIMITED WARRANTY, OR LOSS OF USE DURING THE PERIOD THAT THE PRODUCT IS BEING REPAIRED.

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 code reader. The safety messages presented below and throughout this user's manual are reminders to the operator to exercise extreme care when using this device. Always refer to and follow safety messages and test procedures provided by vehicle manufacturer. Read, understand and follow all safety messages and instructions in this manual.

Safety 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.

DANGER

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

WARNING

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

CAUTION

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 code reader as described in the user's manual, and follow all safety messages.

WARNING

- 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 code reader 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.

TABLE OF CONTENTS

ONE-YEAR LIMITED WARRANTY.....	2
SAFETY INFORMATION.....	4
SAFETY MESSAGE CONVENTIONS USED.....	4
IMPORTANT SAFETY INSTRUCTIONS.....	4
1 USING THIS MANUAL.....	7
1.1 BOLD TEXT.....	7
1.2 SYMBOLS AND ICONS.....	7
1.2.1 SOLID SPOT.....	7
1.2.2 ARROW ICON.....	7
1.2.3 NOTE AND IMPORTANT MESSAGE.....	7
2 INTRODUCTION.....	8
2.1 CODE READER DESCRIPTIONS.....	8
2.2 ACCESSORY DESCRIPTIONS.....	8
2.3 TECHNICAL SPECIFICATIONS.....	9
3 GETTING STARTED.....	9
3.1 PROVIDING POWER TO CODE READER.....	9
3.1.1 CONNECTING TO VEHICLE POWER.....	9
3.1.2 CONNECTING TO PERSONAL COMPUTER WITH USB CABLE.....	9
3.2 APPLICATION OVERVIEW.....	10
4 OBDII/EOBD OPERATIONS.....	10
4.1 READ CODES.....	11
4.2 ERASE CODES.....	12
4.3 LIVE DATA.....	13
4.4 VIEW FREEZE FRAME.....	15
4.5 READ I/M READINESS STATUS DATA.....	16
4.6 REQUEST VEHICLE INFORMATION.....	18
5 SYSTEM SETUP.....	20
5.1 SELECT LANGUAGE.....	20
5.2 CONFIGURE MONITORS.....	21
5.2.1 SPARK IGN REQUIRED MONITORS.....	22

5.2.2 COMPRESSION IGN REQUIRED MONITORS.....	23
5.2.3 ALLOWED INC MONITORS.....	24
5.2.4 RESET FACTORY DEFAULT.....	25
5.3 UNIT OF MEASURE.....	25
5.4 KEY BEEP SET.....	26
5.5 DIAG BEEP SET.....	27
5.6 TOOL SELF-TEST.....	28
5.6.1 DISPLAY TEST.....	28
5.6.2 KEYPAD TEST.....	28
5.6.3 LED TEST.....	29
6 TOOL INFORMATION.....	30
7 NT WONDER INTRODUCTION.....	31
7.1 UPDATE THE CODE READER.....	31
7.2 SEARCHING DTC.....	32
7.3 USER MANUAL.....	33
7.4 UPDATE TOOL SETTINGS.....	33

1 Using This Manual

We provide tool usage instructions in this manual. Below is 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:

Press the **ENTER** button to select.

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 System Setup is selected, a menu that lists all available options displays. Menu options include:

- Languages.
- Configure monitors
- Unit of measure.
- Key Beep Set
- Diag Beep Set
- Tool self-test

1.2.2 Arrow Icon

 An arrow icon indicates a procedure.

Example:



To change menu language:

1. Use the UP/DOWN key to highlight **Language** on the menu.
2. Press the **ENTER** button to select.

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 keypad as water might find its way into the code reader.

2 Introduction

NT201 is developed by the most distinguished mind of the industry. It is specially designed to support all 10 OBDII service modes, including live data and on so, on OBDII/EOBD compliant cars, SUVs, light-duty truck and mini-vans sold worldwide since 1996.

2.1 Code Reader Descriptions

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



Figure 2-1 Front View

- A. **OBD II Cable** - provides communication for vehicle DLC.
- B. **LCD Display** - shows menus, test results and operation tips.
- C. **Green LED Display** - indicates the engine system is working normally (all monitors on the vehicles are active and performing their diagnostic testing), and no DTCs are found.
- D. **Yellow LED Display** - shows the tool finds a possible problem. Pending DTCs exist or/and some of the vehicle's emission monitors have not run their diagnostic testing.
- E. **Red LED Display** - indicates there are some problems in one or more of the vehicle's systems. In this case, the MIL lamp on the instrument panel is on.
- F. **UP Key** - quick access to the Read Codes function before going to diagnostic menu and moves selection up. When looking up DTC, it is used to change value of selected character.
- G. **DOWN Key** - Quick access to the Clear Codes function before going to diagnostic menu and moves selection down. When looking up DTC, it is used to change value of selected character.
- H. **One Click I/M Readiness Key** - quick checks state emissions readiness and drive cycle verification.
- I. **ESC Key** - cancels an action and returns to previous screen or level.
- J. **ENTER Key** - confirms an action or movement and moves to next level.
- K. **USB Port** - provides a USB connection between the code reader and PC or laptop.

2.2 Accessory Descriptions

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

- 1 **User's Guide** - provides operation instructions for the usage of the code reader.
- 2 **USB Cable** - provides connection between the code reader and a computer to upgrade the tool.
- 3 **Software CD** - includes the user's manual, NT Wonder update software and update files.

2.3 Technical Specifications

Display: 320*240 pixel color display

Working Temperature: 0 to 60 °C (32 to 140°F)

Storage Temperature: -20 to 70°C (-4 to 158°F)

Power Supply: 8-18V vehicle power

Supported Protocols: J1859-41.6, J1850-10.4, ISO9141, KWP2000 (ISO 14230), and CAN (Control Area Network ISO 11898)

Dimensions (L*W*H): 120*75*20mm

Weight: 0.3kg

3 Getting Started

This section describes how to provide power to the code reader, provides brief introductions of applications loaded on the code reader and display screen layout and illustrates how to input text and numbers with the code reader.

3.1 Providing Power to Code reader

Before using the code reader, make sure to provide power to the code reader.

The unit operates on any of the following sources:

- 12-volt vehicle power
- USB connection to personal computer.

3.1.1 Connecting to Vehicle Power

The code reader normally powers on whenever it is connected to the data link connector (DLC).



To connect to vehicle power:

1. Locate the data link connector (DLC). The DLC is generally located under the dash on the driver side of the vehicle.
2. Connect the code reader with the DLC.
3. Switch the ignition key to the ON position.
4. The code reader automatically boots up.

IMPORTANT

Never try to provide power for the code reader from USB connection when the code reader is communicating with a vehicle.

3.1.2 Connecting to Personal Computer with USB Cable

The code reader also receives power through the USB port when it is connected to a PC for updating software and transferring saved files.



To connect to PC:

1. Insert the small end of the USB cable to the USB port at the right side of the code reader and the large end to a computer.
2. Press the power switch of the code reader to power it on.

3.2 Application Overview

When the code reader boots up, the Home screen opens. This screen shows all applications loaded on the unit.

Following applications are preloaded into the code reader:

- **Diagnostics** – leads to OBDII screens for all 7 generic OBD system tests.
- **About** – leads to screen that shows information about the code reader.
- **Setup** – leads to screens for adjusting default settings to meet your own preference when using the code reader.

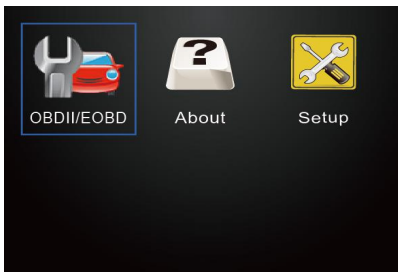


Figure 3.1 Sample Home Screen

4 OBDII/EOBD Operations

OBD-II/EOBD menu lets you access all OBD service modes. According to ISO 9141-2, ISO 14230-4, and SAE J1850 standards, the OBD application is divided into several sub programs, called 'Service \$xx'. Below is a list of OBD diagnostic services:

- **Service \$01** - request current powertrain diagnostic data
- **Service \$02** - request powertrain freeze frame data
- **Service \$03** - request emission-related diagnostic trouble codes
- **Service \$04** - clear/reset emission-related diagnostic information
- **Service \$05** - request emission-related diagnostic trouble codes detected during current or last completed driving cycle
- **Service \$06** - request Vehicle Information

When **Diagnostics** application is selected from Home screen, the code reader starts to detect the communication protocol automatically. Once the connection has established, a menu that lists all of the tests available on the identified vehicle displays. Menu options typically include:

- Read Codes
- Freeze Frame Data
- Erase Codes
- Live Data
- I/M Readiness
- Vehicle Information
- Unit of measure

NOTE

Not all function options listed above are applicable to all vehicles. Available options may vary by the year, model, and make of the test vehicle. A "The selected mode is not supported!" message displays if the option is not applicable to the vehicle under test. When the code reader links to vehicle, it checks the status of I/M Monitors automatically, and gives a summary report on the display as illustrated below.

System Status	
MIL Status	ON
Codes Found	8
Ignition Type	Spark
Monitors N/A	2
Monitors OK	3
Monitors INC	5

Figure 4-1 Sample System Status Screen

NOTE

If vehicle is equipped with more than one computer module (for example a powertrain control module [PCM] and a transmission control module [TCM]), the code reader identifies them by their identification names (ID) assigned by manufacturer (i.e. Engine or Module \$A4).

A screen with prompted information to erase the previously stored data in order to save the data from this test displays as below.

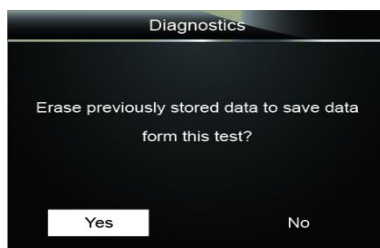


Figure 4-2 Sample Erase the Previous Stored Data Screen

If previous data is to be erased, select **Yes**; if data is not to be erased, Use the **UP/DOWN** key to pick No. Wait a few seconds to return to Diagnostic Menu.

NOTE

If no data is stored in the code reader, the above screen will not show up.

4.1 Read Codes

Read Codes menu lets you read stored codes and pending codes found in the control unit. Typical menu options include:

- Stored Codes
- Pending Codes

Diagnostic trouble 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 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.

There are two ways to read codes using NT201.

- Press the **Read** hot key to read codes from home screen.
- Traditional way: select Read Codes from the diagnostic menu.



To read codes from a vehicle:

1. Press the **Read** hot key to directly read the codes from home screen. Or scroll with the **UP/DOWN** key to highlight **Read Codes** from Diagnostic Menu and press the **ENTER** key.

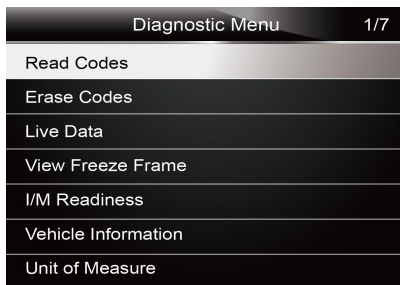


Figure 4-3 Sample Diagnostic Menu Screen

2. Select **Stored Codes/Pending Codes** and press the **ENTER** key to confirm.

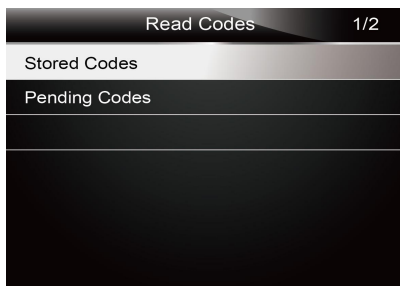


Figure 4-4 Sample Read Codes Screen

3. A code list including code number and its description displays.

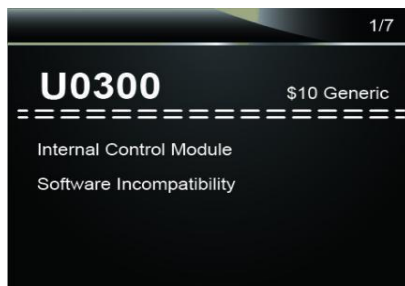


Figure 4-5 Sample DTC Description Screen

NOTE

If no DTCs are present, the message “No (Pending) Codes Found!” is displayed. If any manufacturer specific or enhanced codes detected, NT201 reads the correct DTC information automatically according to the VIN.

4.2 Erase Codes

Erase Codes menu lets you to clear all current DTCs from the control module. Also it erases all temporary ECU information, including freeze frame. So make sure that the selected system are

completely checked and serviced by technicians and no vital information will be lost before clearing codes.

The way to erase codes:

- Selecting Erase Codes from the diagnostic menu.

NOTE

- To clear codes, make sure that the ignition key is switched to ON with the engine off.
- Erase 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. Use the **UP/DOWN** key to highlight **Erase Codes** from Diagnostic Menu and press the **ENTER** key.

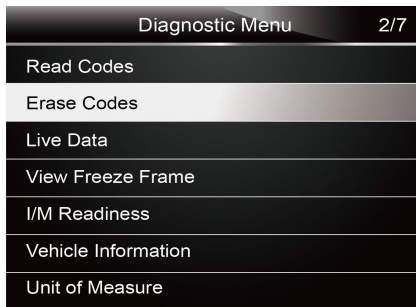


Figure 4-6 Sample Diagnostic Menu Screen

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

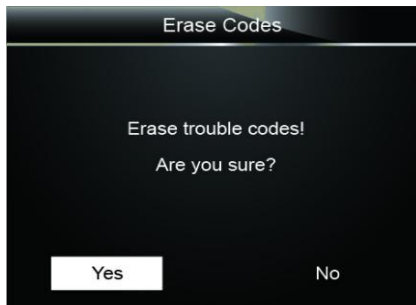


Figure 4-7 Sample Erase Codes Screen

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

4.3 Live Data

Live Data menu lets you view real time PID data from the electronic control module.

4.3.1 View Data

The **View Data** function allows real time viewing of the vehicle's electronic control unit's PID data, including sensor data, operation of switches, solenoids and relays.

Menu options typically include:

- Complete Data
- Unit of measure (Please refer to Chapter 7 **System Setup**)

4.3.1.1 Complete Data Set

Complete Data Set displays all supported PIDs of the vehicle being tested.

- 
- To view all live PID data:
1. Use the **UP/DOWN** key to highlight **Live Data** from Diagnostic Menu and press the **ENTER** key.

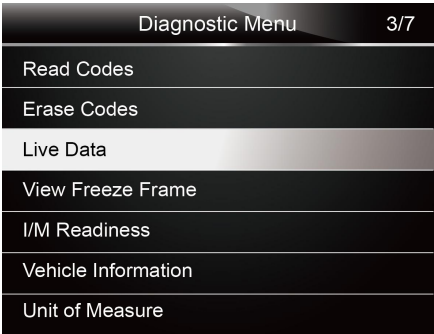


Figure 4-8 Sample Diagnostic Menu Screen

2. Select **Complete Data Set** from the menu and press the **ENTER** key to display the datastream screen.



Figure 4-9 Sample View Data Menu Screen

3. Scroll with the up and down arrow keys to scroll through data to select lines, and left and right arrow keys to scroll back and forth through different screens of data.

Live Data 1	
DTC_CNT	7
FUELSYS1	--
FUELSYS2	--
LOAD_PCT(%)	0.0
ECT(°C)	-12
SHRTFT1(1%)	0.0
LINGFT1(%)	2.3

Figure 4-10 Sample Complete List Screen

4. Press the **ENTER** key to view PID graph if the PID gives a numeric reading.

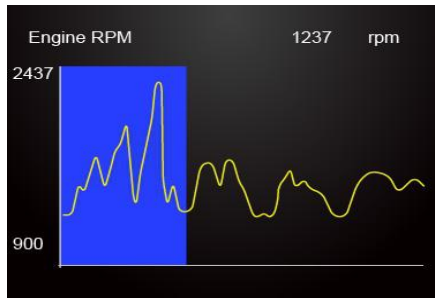


Figure 4-11 Sample PID Graph Screen

5. Use the **ESC** key to return to diagnostic menu.

4.4 View Freeze Frame

Freeze Frame menu displays freeze frame 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.

▶ To view freeze frame data:

1. Select **View Freeze Frame** from the Diagnostic Menu. Details of freeze frame data displays.

Diagnostic Menu 4/7	
Read Codes	
Erase Codes	
Live Data	
View Freeze Frame	
I/M Readiness	
Vehicle Information	
Unit of Measure	

Figure 4-12 Sample Diagnostic Menu Screen

2. Use the up and down arrow keys to scroll through data to select lines, and ESC arrow keys to scroll back and forth through different screens of data. If no freeze frame detected, the message "No freeze frame data stored!" is displayed.

View Freeze Frame 27	
BARO(psi)	14.6
VPWR(V)	12.226
LOAD_ABS%	0.0
EQ_RAT	0.995
TP_R(%)	0.0
AAT(°F)	-40
TP_B(%)	0.0

Figure 4-13 Sample Freeze Data Screen

3. Use the **ESC** key to return to Diagnostic Menu.

4.5 Read I/M Readiness Status Data

I/M Readiness option allows to view a snapshot of the operations for the emission system on OBDII/EOBD vehicles.

I/M Readiness is a useful function used to check if all monitors are OK or N/A. The vehicle's computer performs tests on the emission system during normal driving conditions. After a specific amount of drive time, the computer's monitors decide if the vehicles emission system is working correctly.

There are two types of I/M Readiness tests:

- Since DTCs Cleared - shows status of the monitors since the DTCs were last cleared.
- This Drive Cycle - shows status of monitors since the start of the current drive cycle.

When the monitor's status is:

- OK - vehicle was driven enough to complete the monitor.
- INC (Incomplete) - vehicle was not driven enough to complete the monitor.
- N/A (Not Applicable) - vehicle does not support that monitor.

There are two ways to retrieve I/M Readiness Status data:

- One-click I/M readiness key
- Typical way: select I/M Readiness from Diagnostic Menu

NOTE

- To review I/M Readiness status, make sure that the ignition key is switched to ON with the engine off.
- Not all monitors are supported by all vehicles.



To retrieve I/M Readiness Status data by one-click I/M readiness key:

1. Press the **One-Click I/M Readiness Key** on the keypad and the following screen displays.



Figure 4-14 Sample Diagnostic Menu Screen

2. Colored LED and build-in beeper provide both visual and audible reminders for emission check and DTCs. Below is the interpretation of the LED and build-in beeper.

When the LED is :

- Green - Indicates that engine systems are "OK" and working properly (the number of Monitors equipped with the vehicle which have run and performed their self-diagnostic testing is in the allowed range. MIL is off.).No stored and pending DTCs exist. The vehicle is ready for an Emissions Test.
- Yellow - The tool finds a possible problem. It indicates the following two conditions:
 - (1) Pending DTCs exist. Please check the I/M Readiness test result screen and use the Read Codes function to view detailed codes information.

(2) Some of the vehicle's emission monitors have not working properly. If the I/M Readiness screen shows no DTC (including pending DTC), but the Yellow LED is still illuminated, it indicate a "Monitor Has Not Run" status.

- Red - Indicates some problems exist with one or more of the vehicle's system, and the vehicle is not ready for an Emissions Test. As well there are DTCs found. The MIL lamp on the vehicle's instrument panel will light steady. The problem that is causing the illumination of Red LED should be fixed before an Emissions Test or driving the vehicle further.

The built-in beeper works with the colored LED simultaneous, as an assistance to reflect the I/M Readiness test results:

- Green - two long beeps.
- Yellow - short, long, short beeps.
- Red - four short beeps.

NOTE

The built-in beeper which makes different tones corresponding to different LED indicators is invaluable when the test is performed while driving or in bright areas where LED illumination may not be visible.



To retrieve I/M Readiness Status data by typical way:

1. Scroll with **UP/DOWN** key to highlight **I/M Readiness** from Diagnostic Menu and press the **ENTER** key. If vehicle supports both types of monitors, a screen for monitor type selection displays. Select a monitor type and press the **ENTER** key.

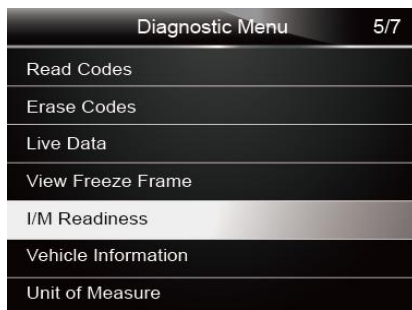


Figure 4-15 Sample Diagnostic Menu Screen

2. If the vehicle being tested supports both types of monitors, following screen displays.

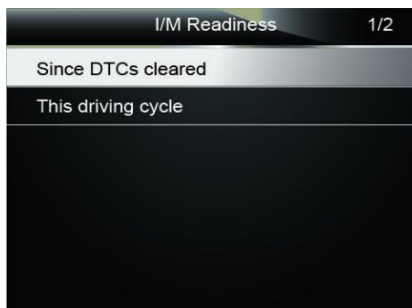


Figure 4-16 Sample I/M Readiness Screen

3. Depending on readiness test, one of these 2 screens will be present. Use the up and down arrow keys to scroll through data. Press the **BACK** key to exit.

A screenshot of a vehicle's IM Readiness screen. The title bar at the top says "Since DTCs cleared" on the left and "1" on the right. Below the title bar is a list of seven readiness monitors: MIL, MIS, FUEL, CCM, CAT, HCAT, and EVAP. Each monitor has a status value to its right: ON, OK, OK, OK, INC, N/A, and INC respectively. The MIL row is highlighted with a light gray background.

Since DTCs cleared		1
MIL		ON
MIS		OK
FUEL		OK
CCM		OK
CAT		INC
HCAT		N/A
EVAP		INC

Figure 4-17 Sample IM Readiness Screen 1

Or

A screenshot of a vehicle's IM Readiness screen. The title bar at the top says "This driving cycle" on the left and "1" on the right. Below the title bar is a list of seven readiness monitors: MIS, FUEL, CCM, CAT, HCAT, EVAP, and AIR. Each monitor has a status value to its right: OK, OK, OK, INC, N/A, OK, and N/A respectively. The MIS row is highlighted with a light gray background.

This driving cycle		1
MIS		OK
FUEL		OK
CCM		OK
CAT		INC
HCAT		N/A
EVAP		OK
AIR		N/A

Figure 4-18 Sample IM Readiness Screen 2

4.6 Request Vehicle Information

Vehicle Information allows to request the vehicle's VIN number, calibration ID(s) which identifies software version in vehicle control module(s), calibration verification numbers (CVN(s)) and in-use performance tracking on model year 2000 and newer OBD II compliant vehicles.

CVNs are calculated values required by OBD II regulations. They are reported to check if emission-related calibrations have been changed. Multiple CVNs may be reported for a control module. It may take several minutes to do the CVN calculation. In-use performance tracking tracks performance of key readiness monitors.

NOTE

Available options will vary depending on the vehicle under test.



To request vehicle information:

1. Use the **UP/DOWN** key to highlight **Vehicle Info.** from Diagnostic Menu and press the **ENTER** key.

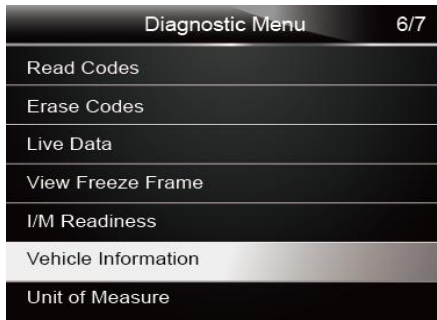


Figure 4-19 Sample Diagnostic Menu Screen

2. Follow on-screen instruction and send the command to read vehicle information. A screen with a list of available options displays.

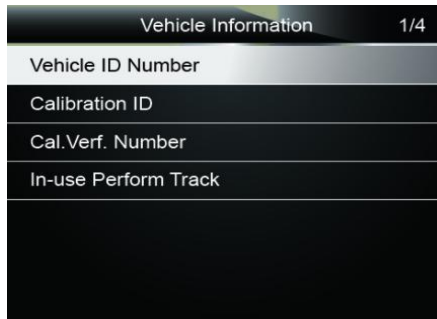


Figure 4-20 Sample Vehicle Info Screen

3. Use the **UP/DOWN** key to highlight an available option and press the **ENTER** key. A screen with details of the selected option displays.

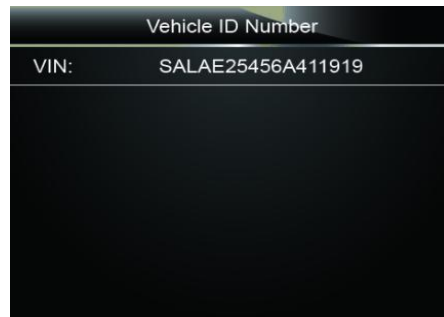


Figure 4-21 Sample Calibration ID Screen

4. Press the **ESC** key to exit and return.

5 System Setup

This section illustrates how to program the code reader to meet your specific needs. When Setup application is selected, a menu with available service options displays. Menu options typically include:

- Language
- Configure monitors
- Unit of measure
- Key Beep Set
- Diag Beep Set
- Tool self-test

5.1 Select Language

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



To configure system language:

1. Use the **LEFT/RIGHT** key to highlight **Setup** from home screen and press the **ENTER** key.

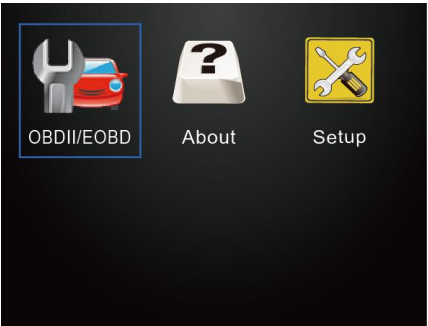


Figure 5-1 Sample Home Screen

2. A screen of a list of menu options displays.

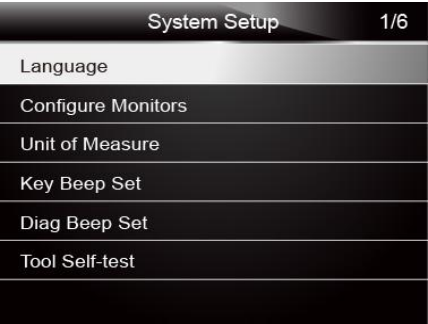


Figure 5-2 Sample Setup Screen

3. Press the **UP/DOWN** key select a language and press the **ENTER** key to confirm. Press the **BACK** key to exit and return.



Figure 5-3 Sample Language Selection Screen

5.2 Configure Monitors

This menu allows the users to configure the monitors required to test spark ignition and compression ignition, the number of monitors to pass diagnosis, and restore the default settings. Menu options typically include:

- Spark IGN Required Monitors
- Compression IGN Required Monitors
- Allowed INC Monitors
- Reset Factory Default

There are two different types of monitors: continuous and non-continuous. Continuous monitors are different in design from the non-continuous monitors. Continuous monitors are being constantly tested and evaluated by the car's computer while the car is running. Conversely, the non-continuous monitors require certain conditions to be met before a test or series of tests can be completed.

Continuous Monitors:

- Misfire
- Fuel System
- Comprehensive Component

Non-Continuous Monitors:

NOTE

Non-continuous monitors are different for spark ignition cars (gasoline engines) and compression ignition card (diesel engines).

Spark ignition vehicles (Gas)

- Catalyst (CAT)
- Heated Catalyst
- Evaporative (EVAP) System
- Secondary Air System
- Oxygen (O2) Sensor
- Oxygen Sensor Heater
- EGR (Exhaust Gas Recirculation) and/or VVT System

Compression ignition vehicles (Diesel)

- NMHC Catalyst
- NOx/SCR After treatment
- Boost Pressure
- Exhaust Gas Sensor
- PM Filter
- EGR and/or VVT System



To configure monitors:

1. Use the **UP/DOWN** key to highlight **Configure Monitors** from **Setup** menu and press the **ENTER** key to confirm.

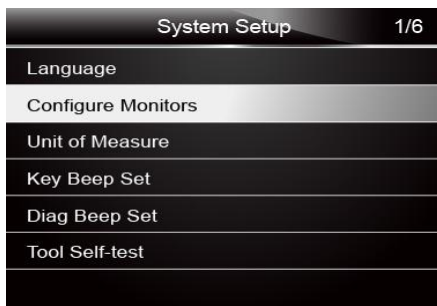


Figure 5-4 Sample Setup Screen

2. A screen with the optional monitors to be configured displays.

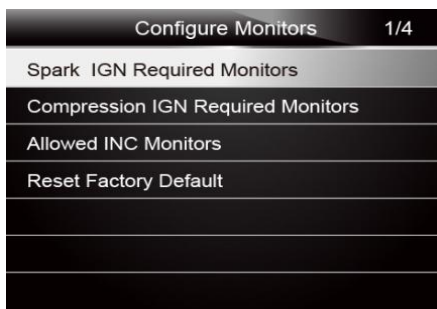


Figure 5-5 Sample Configure Monitors Display

5.2.1 Spark IGN Required Monitors

In this menu, the operators can configure monitors for spark ignition cars (gasoline engines).



To configure spark IGN required monitors:

1. Use the **UP/DOWN** key to highlight **Spark IGN Required Monitors** from menu and press the **ENTER** key to confirm.
2. The custom monitors selection screen displays.

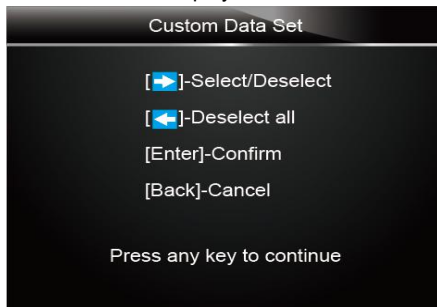


Figure 5-6 Sample Custom Monitors Selection Screen

3. Use the **RIGHT** key to select or deselect a monitor or press the **LEFT** key to deselect all the monitors. Press the **ENTER** key to confirm and **BACK** key to cancel.

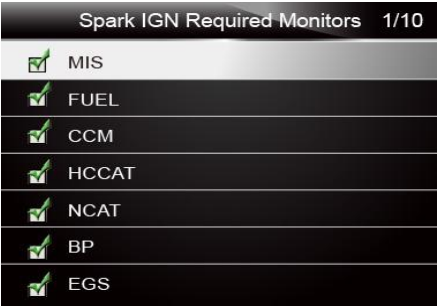


Figure5-7 Sample Spark IGN Required Monitors Selection Screen

NOTE

The number to the upper right corner of display indicates the total number of optional monitors and sequence of currently selected monitor.

5.2.2 Compression IGN Required Monitors

In this menu, the operators can configure monitors for compression ignition cars (diesel engines).

- ▶ To configure spark compression required monitors:
 1. Use the **UP/DOWN** key to highlight **Compression IGN Required Monitors** from the menu and press the **ENTER** key to confirm.

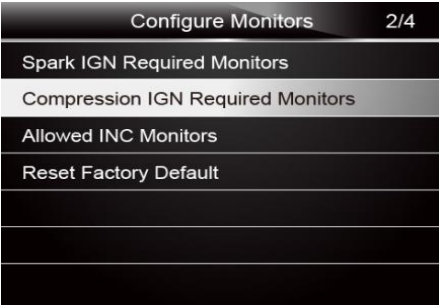


Figure 5-8 Sample Configure Monitors Display

- 2. The custom monitors selection screen displays and Use the **RIGHT** key to select or deselect a monitor or press the **LEFT** key to deselect all the monitors. Press the **ENTER** key to confirm and **BACK** key to cancel.

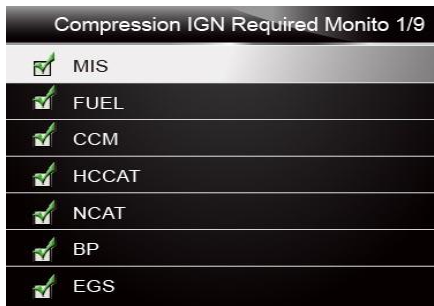


Figure5-9 Sample Spark IGN Required Monitors Selection Screen

5.2.3 Allowed INC Monitors

Emissions tests vary depending on the geographic or regional area in which the vehicle is registered. NT201 provides a more flexible way to meet different standards, which allows the user to select 0, 1, 2, 3 INC monitors in test.

- To configure allowed INC monitors:
1. Use the **UP/DOWN** key to highlight **Allowed INC Monitors** from the menu and press the **ENTER** key to confirm.

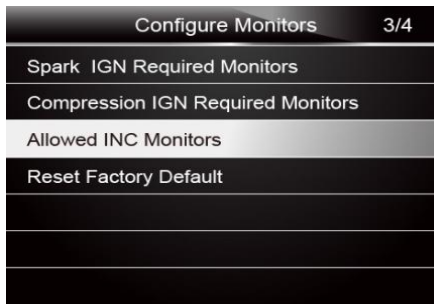


Figure5-10 Sample Configure Monitors Selection Screen

2. The custom INC monitors selection screen displays and scroll with the up and down arrow keys to select. Press the **ENTER** key to confirm and **BACK** key to cancel.

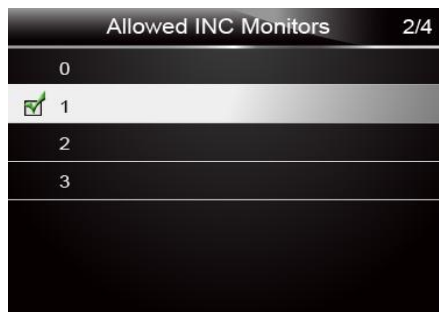


Figure 5-11 Sample Allowed INC Monitors Selection Screen

5.2.4 Reset Factory Default

This menu will allow the users to restore the default configuration settings in the Configure Monitors menu, and delete any customized settings. In this case, it will include all the available monitors for the Spark IGN Required Monitors and Compression IGN Required Monitors. Still the Allowed INC Monitors will be set to 1.

- ▶ To reset factory default:
 1. Use the **UP/DOWN** key to highlight **Reset Factory Default** from the menu and press the **ENTER** key to confirm.

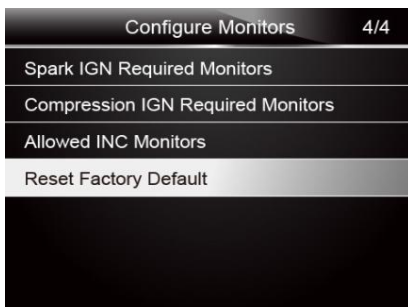


Figure5-12 Sample Configure Monitors Selection Screen

2. A message prompting to reset factory default displays. Answer **Yes** to confirm the request or answer **No** to abort and return.



Figure5-13 Sample Reset Factory Default Screen

5.3 Unit of measure

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

- ▶ To change the unit setup:
 1. Scroll the **UP/DOWN** keys to highlight **Unit of Measure** from Setup menu and press the **ENTER** key.

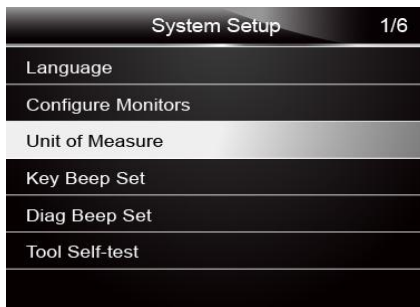


Figure 5-14 Sample Setup Screen

2. Press the **UP/DOWN** arrow key select an item and press the **ENTER** key to save and return.

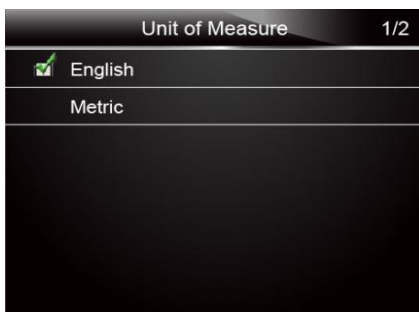


Figure 5-15 Sample Unit Selection Screen

5.4 Key Beep Set

Key beep set opens a dialog box that allows you to turn on/off the built-in speaker for key pressing.

-  To set the key beep:
1. Use the **UP/DOWN** key to highlight **Key beep set** from Setup menu and press the **ENTER** key.

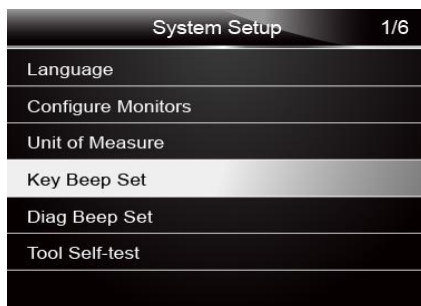


Figure 5-16 Sample Setup Screen

2. Press the **UP/DOWN** arrow key select an item and press the **ENTER** key to save and return.

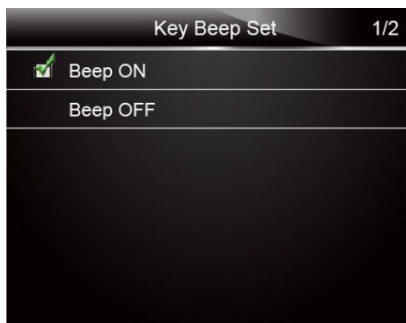


Figure 5-17 Sample Beep Set Selection Screen

5.5 Diag Beep Set

Key beep set opens a dialog box that allows you to turn on/off the built-in speaker when performing diagnostics.

- ▶ To set the diag beep:
1. Use the **UP/DOWN** key to highlight **Key Beep Set** from Setup menu and press the **ENTER** key.

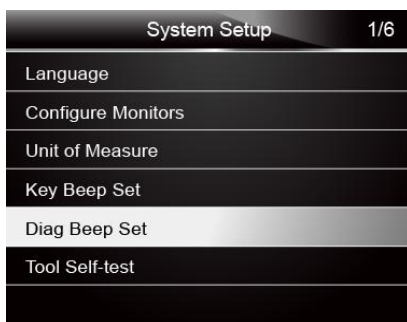


Figure 5-18 Sample Setup Screen

2. Press the **UP/DOWN** key to select an item and press the **ENTER** key to save and return.

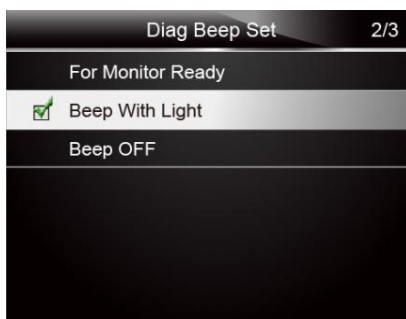


Figure 5-19 Sample Diag Beep Selection Screen

5.6 Tool Self-test

Key beep set opens a dialog box that allows you to check if the LCD display and the operation of keypad and LED are working correctly. Typical menu includes:

- Display Test
- Keypad Test
- LED Test

5.6.1 Display Test

Selecting Display Test option opens a screen that allows you to check the functionality of the display.

- ▶ To test the display:
1. Use the **UP/DOWN** key to highlight **Display Test** from Setup menu and press the **ENTER** key to start test.

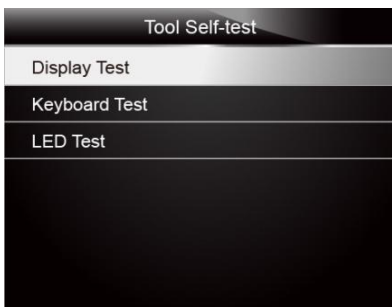


Figure 5-20 Sample Tool Self-test Screen

2. Check if there are any missing spots in the LCD screen



Figure 5-21 Sample LCD Test Screen

3. To quit the test, press the **BACK** key.

5.6.2 Keypad Test

Selecting Key Test option opens a screen that allows you to check the functionality of the keypad.

- ▶ To test the keypad:
1. Use the **UP/DOWN** key to highlight **Keyboard Test** from Setup menu and press the **ENTER** key.

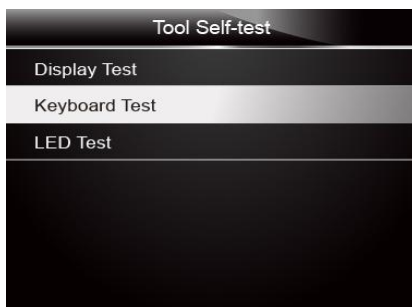


Figure 5-22 Sample Tool Self- test Screen

2. Press any key to start test. Key name or scroll direction should show on display when you press a key. Double press **BACK** to return.



Figure 5-23 Sample Key Test Screen

5.6.3 LED Test

Selecting LED Test option opens a screen that allows you to check the functionality of the LED.

- ▶ To test the LED:
1. Use the **UP/DOWN** key to highlight **LCD Test** from Setup menu and press the **ENTER** key to start test.

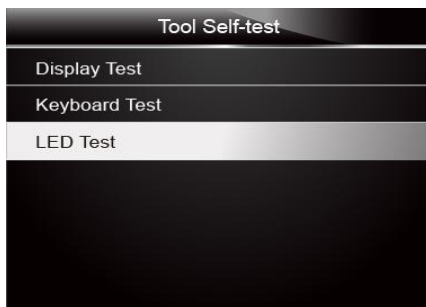


Figure 5-24 Sample Tool Self-test Screen

2. Scroll with the up and down arrow keys to select the desired LED lamps to check. The LED should turn on/off according to the selected commands.

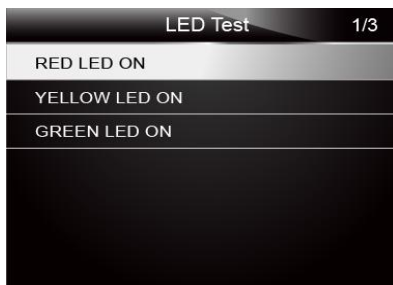


Figure 5-25 Sample LED Test Screen

To quit the test, press the **BACK** key.

6 Tool Information

Selecting About option opens a screen that show information about your code reader, such as serial number and software version.



To view information of your code reader:

1. Use the **LEFT/RIGHT** key to highlight **About** from home menu and press the **ENTER** key.

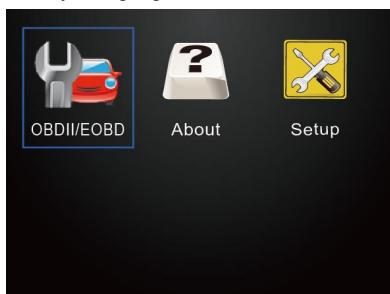


Figure 6-1 Sample Home Screen

2. A screen with detailed information of the code reader displays.



Figure 6-2 Sample Tool Information Screen

3. Press the **BACK** key to exit and return to the Setup menu.

7 NT Wonder Introduction

NT Wonder is an extremely easy-to-use that is used to update NT201 code reader. Also, it allows you to upload recorded test results to your PC or laptop for analysis and printing. Still, it enables you to search DTC, read the manuals as well set up the language and style of the application.

This section illustrates how to use NT Wonder to perform its functions:

- Updating the Code Reader
- Printing
- Searching DTC
- Read the manuals
- Update tool settings

7.1 Updating the Code Reader

NT201 is able to be updated to keep you stay current with the latest development of diagnosis. To update the code reader, you need following tools:

- NT201 OBDII/EOBD Code Reader
- Update Tool NT Wonder
- PC or laptop with USB Ports and Internet explorer
- USB cable

To be able to use update tool, PC or laptop must meet the following minimum requirements:

- Operation System: Win98/NT, Win ME, Win2000, Win XP, VISTA and Windows 7.
- CPU: Intel PIII or better
- RAM: 64MB or better
- Hard Disk Space: 30MB or better
- Display: 800*600 pixel, 16 byte true color display or better
- Internet Explorer 4.0 or newer

IMPORTANT Do not disconnect the code reader from computer, or power off the computer during the process of updating.

To update the code reader:



1. Download the update tool NT wonder and update files from our website and save the applications and files in computer disk.
2. Unzip the update tool file. Follow instructions on computer screen to install the tool and driver.
3. Double click the  desktop icon to launch the application.
4. Click Setting and select the language you want to update.
5. Connect NT201 to computer with the USB cable provided. Please press and hold the HELP key while connecting the USB cable.
6. When NT201 enters the Update Mode, the application would detect it automatically.

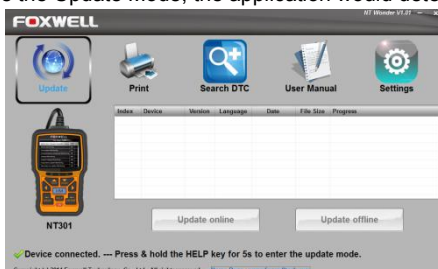


Figure 7-1 Sample Update Mode Screen

NOTE

After entering update mode successfully, there are two different ways for you to update the device.

- Update online: With internet connection, the tool NT Wonder automatically detects the software version of the code reader and read the latest software version from the server. If any new diagnosis software found, it will automatically upgrade your NT201. Otherwise a prompt of new version not detected displays.
- Update offline: Update files will be automatically stored in your computer hard drive with every successful online update. When picking Update offline, the update tool NT Wonder will detect these local files automatically and display them in a list. Ticking one of them will lead to an update process, which eliminates the need to download any file.

7. Click <Update online> or <Update offline> to start updating according to the software version conditions.



Figure 7-2 Sample Update Process Screen

8. A **Update Finished** Message displays when the update is completed.



Figure 7-3 Sample Update Done Screen

7.2 Searching DTC

Searching DTC option opens a screen that allows you to look up the DTC.

To search DTC:

1. Download and launch NT Wonder as instructed on page 44 of 9.1 **Updating the Code Reader**.
2. Start the printing application by clicking the **Search DTC** Button from the menu.
3. Input the valid code number and the definition of the code will be highlighted on the screen.

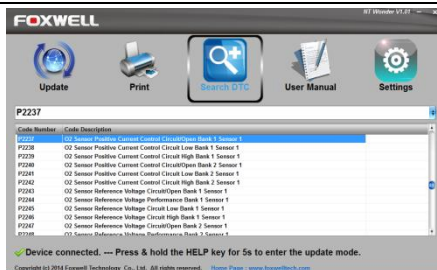


Figure 7-4 Sample Search DTC Screen

7.3 User Manual

User Manual option opens a screen that allows you to read the manual in PDF format.

To read the manual:

- ▶ 1. Download and launch NT Wonder as instructed on page 43 of 9.1 **Updating the Code Reader**.
2. Activate the application by clicking the **User Manual** Button from the menu.
3. Double click to open the manual you want to check.

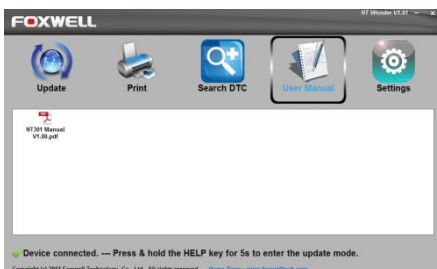


Figure 7-5 Sample User Manual Screen

7.4 Update Tool Settings

Settings option opens a screen that allows you to set the language and style of the tool. Still, it offers the option for you to automatically check the update files from the server.

To set up the update tool:

- ▶ 1. Download and launch NT Wonder as instructed on page 43 of 9.1 **Updating the Code Reader**.
2. Activate the application by clicking the **Settings** from the menu.
3. Select the language and the style you want from the left to right column.
4. Select and tick the "Auto check for updates" on the bottom of the screen, then press **Apply** key to confirm.

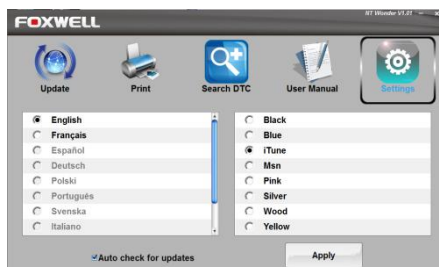


Figure 7-6 Sample of Setting Menu