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For Technical Assistance, send us email at

support@foxwelltech.com

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1. One-Year Limited Warranty

Subject to the conditions of this limited warranty, 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 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’s 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.

2. Safety Information

For your safety, and to prevent damage to the equipment and vehicles, read this manual thoroughly before operating your NT100 Data logger. 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 the manufacturer of the vehicle or equipment being tested. Read, understand and follow all safety messages and instructions in this manual.

2.1 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.

No.	Signal Word	Hazard Level
1	⚠DANGER	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury to the operator or to bystanders.
2	⚠WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to the operator or to bystanders.
3	⚠CAUTION	Indicates a potentially hazardous situation which, if not avoided, may result in moderate or minor injury to the operator or to bystanders.

2.2 Important Safety Instructions

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

⚠WARNING Do not exceed voltage limits between inputs specified in this user's manual.

⚠WARNING Always wear ANSI approved goggles to protect your eyes from propelled objects as well as hot or caustic liquids.

⚠WARNING 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 Data logger 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.

⚠WARNING 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.

⚠WARNING Keep a dry chemical fire extinguisher suitable for gasoline, chemical and electrical fires in work area.

⚠WARNING 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.

⚠WARNING Do not touch engine components that get very hot when an engine is running to avoid severe burns.

⚠WARNING 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.

⚠WARNING Do not wear jewelry or loose fitting clothing when working on engine.

⚠CAUTION Make sure to turn off ignition before connecting or disconnecting the Data logger.

3. Using This Manual

We provide instructions for the usage of your data logger in this manual. Below is a list of conventions we used in the manual.

Safety Information

See ***Safety Information*** on page 6.

Symbols and Icons

√ Check Note

Additional information about the subject in the preceding paragraph is introduced by a √ Check Note.

Example:

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

● Solid Spot

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

Example:

The Setup function is used to configure the data management software and the device. The Setup allows you to:

- Displays device information;
- Clear device memory;
- Synchronize device internal clock with your computer;

.

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 Data logger.

NOTE

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

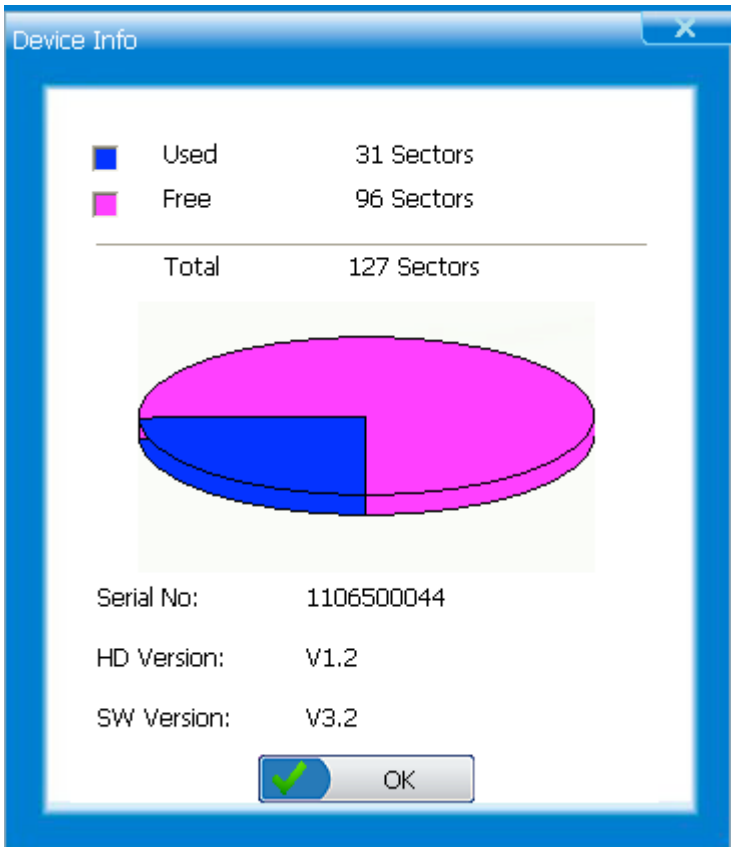
Example:

NOTE Not all data are supported by all vehicles.

Screens

The screens presented are examples only and actual test screen may vary for each vehicle being tested.

Example:



Arrow Icon

▶ An arrow icon indicates a procedure.

Example:

To install NT100 in a vehicle:

▶ 1.Locate the Data Link Connector (DLC) on vehicle.

2.Plug in NT100 to the DLC.

3.Make sure NT100 is correctly attached to the DLC by checking if its LED indicator is blinking.

4. Introduction

NT100 is developed by the most distinguished mind of the industry. It is specially designed to work on all OBDII/EOBD compliant cars, SUVs, light-duty truck and mini-vans sold worldwide since 1996. The NT100 data logger is an indispensible OBD tool that helps with diagnosis and analysis of intermittent engine faults. Also it is a great tool that empowers you to get MPG up and keep your car running at peek performance by continuously logging engine data of every trip you make and watching how your car is being driven.

NT100 data logger communicates with the vehicle via a standard 16-pin OBDII interface. Once plugged into the DLC (Data Link Connector) of your car, it automatically collects and logs data from the on-board computers, including trip start and end times, vehicle speeds, rates of acceleration and braking, any trouble codes detected and also fuel used during the trip. Later, you use the data management software to review the information on your computer screen.

4.1 About OBDII/EOBD

What is OBD?

The first generation of On-Board Diagnostics or OBD I was introduced in early 1980's to control engine functions and diagnose engine problems by vehicle manufacturers. As the OBDI lacked standardization of protocols and interface, it allowed different interpretations among vehicle manufacturers.

OBDII, the second generation On-Board Diagnostics, improved in both capability and standardization, is a system developed in mid 1990's by the Society Automotive Engineers (SAE) to standardize automotive electronic diagnosis. EOBD is European version of OBDII required in Europe since2001.

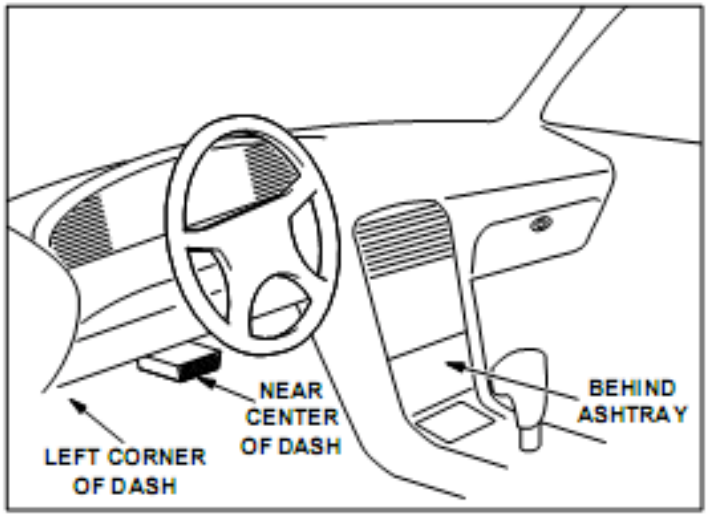
The OBDII standard specifies:

- A generic diagnostic port (Data Link Connector) and its pinout;
- The protocols and the messaging format;
- A standard list of vehicle parameters identifications;
- A standard list of diagnostic trouble codes (DTCs);

Data Link Connector

The Data Link Connector (DLC) is a standard 16-pin interface located under the dashboard on the driver's side of the passenger compartment. If the DLC is not located under the dashboard as stated, a decal describing its location should be attached to the dashboard in the area the DLC should have been located.

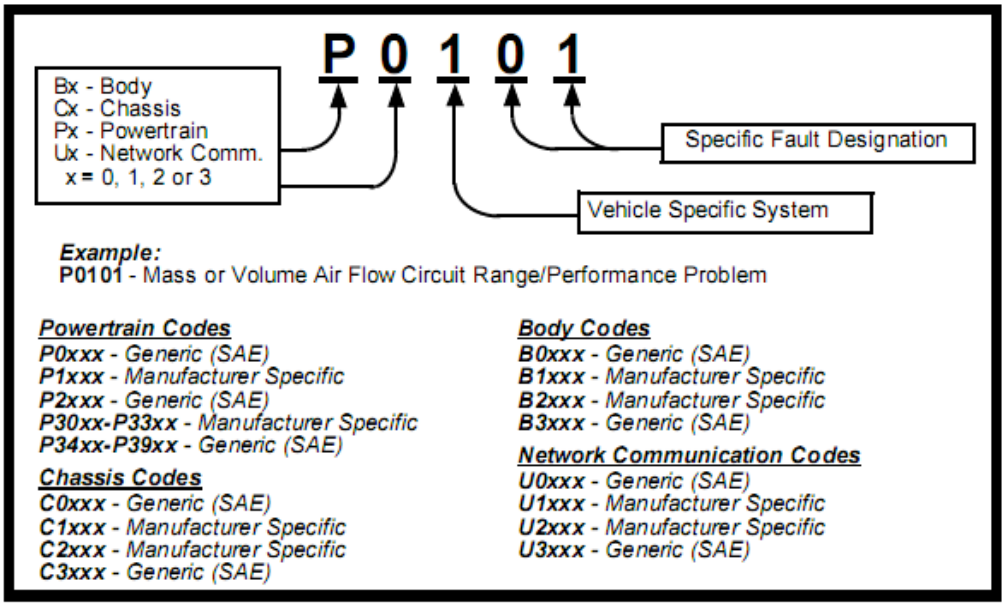
NOTE On some Asian and European vehicles the DLC is located behind the "ashtray", which must be removed to access it, or on the far left corner of the dash. If the DLC cannot be found, consult the vehicle's service manual for the location.



Diagnostic Trouble Codes (DTCs)

Diagnostic Trouble Codes (DTCs) are faults stored by vehicle computers when problems that affect engine performance and emissions are detected. DTCs are used to help identify the cause of a trouble or troubles with a vehicle, and determine the fault location(s).

DTCs consist of a five-digit alphanumeric code. Please see below for the DTCs format and code types.



4.2 About the Data logger

A. **OBD II Connector** - provides communication with vehicle DLC.

B. **USB Port** - provides a USB connection for PC or laptop.

C. **LED Indicator** - indicates communication status of NT100 and vehicle.

D. **Rear Decal** - provides part number, description and manufacturer information of NT100.

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

IMPORTANT Do not soak the device as water might find its way into the data logger.

Kit Includes

No.	Part	Description
1	NT100 Data Logger	Collects and records vehicle data.
2	USB Cable	Provides connection for computer to update NT100 and review collected data.
3	Quick Start Guide	Brief instructions on operation of NT100.

Specifications

No.	Item	Specification
1	Working Temperature	-40°C to 85°C (-40 °F to 185°F)
2	External Power	8-18 Volts powered by vehicle battery
3	External Power	Built-in Li-ion battery
4	Memory	8MB
5	Storage Capability	Max. 300 hours of data depending on sampling rate and PIDs selected to track
6	Supported Protocols	J1859-41.6, J1850-10.4, ISO9141, KWP2000 (ISO 14230), and CAN (Control Area Network ISO 11898)
7	Sampling Rate	Detects sampling rate automatically according to protocol type and PIDs tracked
8	Time and Date	Accuracy to +/- 2 seconds per day
9	Vehicle Interface	OBDII connector
9	Computer Interface	USB cable
8	Dimensions	46*27*45mm
9	Weight	28g

System Requirements

No.	Item	Description
1	Operation System	Win98/NT, Win ME, Win2000, Win XP, VISTA
2	CPU	Intel P□ or better
3	Memory	64Mb or better
4	Hard Disk Space	5Mb or more
5	Display	800*600 pixel, 16 byte true color display or better

4.3 About the Data Management Software

The data management software is used to display recorded vehicle and driving data and diagnostic reports, and configure the NT100 data logger.

Toolbar

The **Toolbar** provides quick access to the software commands.

1. 

Home - The Home Page displays vehicle and driver summary in a specific period of time.

2. 

Trip Log - Displays summary information of each trip.

3. 

Diagnostic – Displays fault summary of each trip.

4. 

Setup – Displays all setup options.

5. 

Fuel Entry - Enters fuel usage and cost for each vehicle associated with the software.

6. 

Download – Downloads data from NT100 to computer.

7. 

Help - Provides help information on using the device and the data management software.

Data Filters

The data management software allows trip and vehicle data to be sorted by vehicle, driver and date.

1. 

Vehicle – Allows selecting data by vehicle.

2. 

Driver - Allows selecting data by driver.

3. 

Date - Allows selecting data by date.

Tabs

The tabs in this software are used to shift between different types of data.

1. 

Trip Data Report View – Displays detailed trip information for each trip recorded by NT100.

2. 

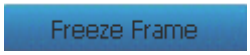
Trip Data Plot View – Displays line graphs in one screen of all available trip data for each trip. Also, plots are allow to be merged for easy and intuitive diagnosis and analysis of faults.

3. 

I/M Readiness – Displays Inspection and Maintenance status of vehicle tested.

4. 

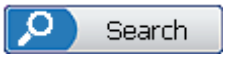
Trouble Log – Displays all vehicle troubles detected by NT100.

5. 

Freeze Frame – Displays freeze data detected by NT100.

Buttons and Controls

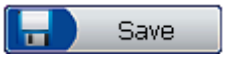
The buttons and controls in the software are designed for easy use of the software.

1. 

Search - Finds data recorded in database of the data management software.

2. 

Print - Prints data through computer.

3. 

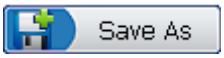
Save - Saves changes made to recorded data and settings.

4. 

Delete - Deletes trip information, vehicle/driver ID(s) and fuel entry from database of the data management software.

5. 

Customize PID - Selects a list of supported PIDs to view and analyse in Trip Report View.

6. 

Save As - Export data to spreadsheet.

7. 

Exit - Exits current view of data.

8. 

Select All - Selects all PIDs to view.

9. 

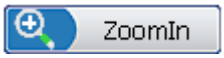
Deselect All - Undo all selection of PIDs.

10. 

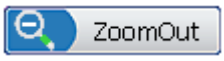
OK – Confirms a selection or setup.

11. 

Cancel – Cancels a selection or setup.

12. 

Zoom In - Zooms in plots.

13. 

Zoom Out - Zooms out plots.

14. 

Restore – Restores zoomed plots to fit to window size..

15. 

New - Adds new driver/vehicle ID(s) and fuel entry.

16. 

Default - Sets acceleration, braking and speed settings to factory defaults.

17. 

Download - Downloads trip data to computer.

18. 

Update - Updates the device to newer version.

19. 

Clear – Clears device memory.

4.4 Installation

Use instructions below to connect NT100 device to a vehicle and install software.

Install NT100 in a Vehicle

To install NT100 in a vehicle:

▶ 1.Locate the Data Link Connector (DLC) on vehicle.

2.Plug in NT100 to the DLC.

3.Make sure NT100 is correctly attached to the DLC by checking if its LED indicator is blinking.

NOTE If the indicator light is enabled, it continuously blinks when connected to vehicle; if it is disabled, it stops blinking once it has established communication with vehicle computer(s); if it fails to communicate with vehicle, it illuminates constantly.

√ The data logger detects the communication protocol when it is connected to the vehicle and uses the protocol until it is connected to another vehicle.

Install Software and Connect NT100 to Computer

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

- Operation System: Win98/NT, Win ME, Win2000, Win XP and VISTA
- CPU: Intel P□ 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

To install the software and connect NT100 to computer:

▶ 1.Download the software from our site www.foxwelltech.com by selecting Home>Updates>NT100, save the software in computer disk, and unzip the file.

2.Double click the  icon and follow instructions on computer screen to install the software.

3.Double click the desktop icon  to launch the software.

4.Plug the smaller connector into NT100's USB port.

5. Insert the USB connector to one of the computer's USB ports.

Register Your Product

To register your product:

1. Visit our site www.foxwelltech.com and select Home>Supports>Register Product.
2. Follow instructions on computer screen to complete the registration.

5. Setups

The 

function is used to configure the data management software and the device. You are allowed to:

- Update the device;
- Display device information;
- Clear device memory;
- Synchronize device internal clock with your computer;
- Reset the device to manufacturer defaults;
- Set the braking thresholds that determine hard and extreme stops;
- Set acceleration thresholds that determine hard and extreme starts;
- Set speed thresholds to monitor vehicle speed;
- Choose engine parameters to be monitored;
- Set your NT100 to turn off MIL, and change LED status;
- Change unit of measurements;
- Display vehicle information that associated with the NT100 data logger;
- Display driver information associated with NT100 data logger.

5.1 Update

NT100 is able to be updated to keep you stay current with the latest development of technology.

√ To update the data logger, you need following tools:

- NT100 data logger
- NT100 data management software
- PC or laptop with USB ports and internet explorer
- USB Cable

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

To update the device:

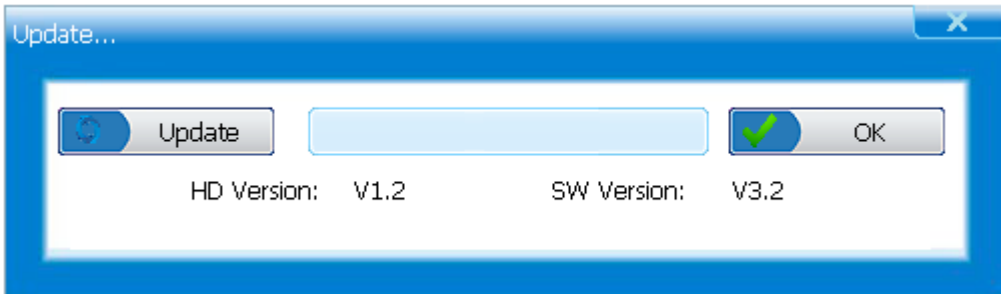
1. Download update file from our website www.foxwelltech.com by selecting Home>Updates>NT100 and save the file in computer disk.
2. Install the data management software and connect the device to a computer.

√ Refer to **Install Software and Connect NT100 to Computer** on page 14 for details of software installation.

3. Click the 

Update icon.
4. Use 

to locate update file and start updating.



5.When update completed, use  to exit.

5.2 View Device Information

Device Info displays memory status, including total space, used space and free space on your NT100, software and hardware information and serial number.

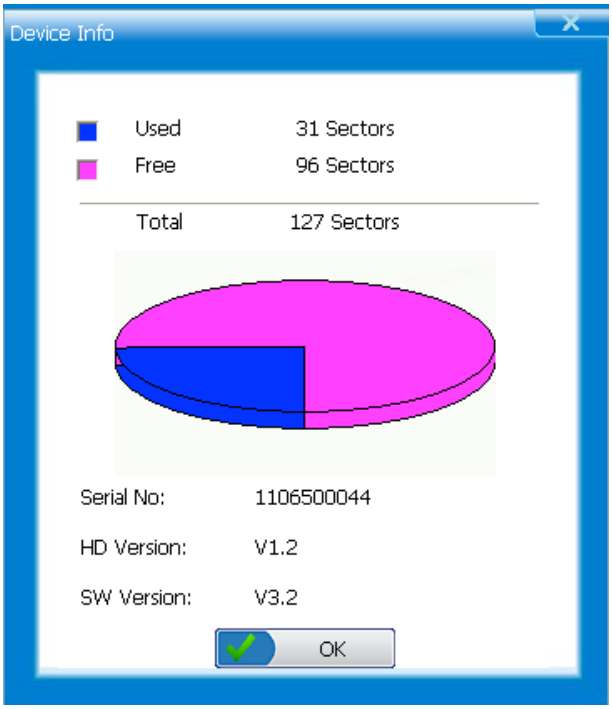
NOTE This command is only available when a NT100 device is connected to your computer.

To view device information:

1.Click the  icon from home screen.

2.Click the  icon from  screen.

3.View device information and click  button to exit.



5.3 Clear Memory

Clear Memory is used to empty the device memory.

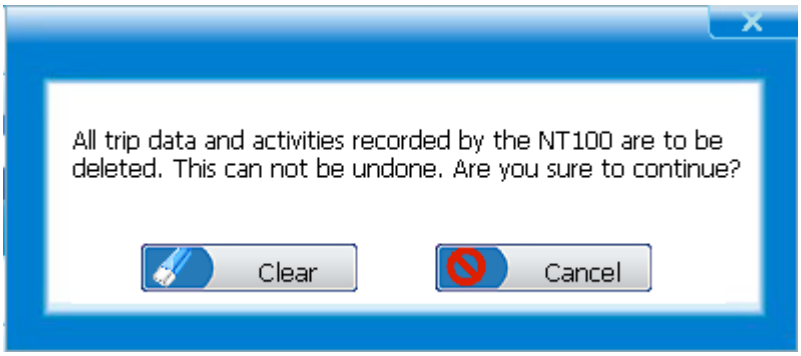
NOTE Make sure all recorded data is completely reviewed before clearing the memory.

To clear device memory:

1.Click the 

icon from 

screen.



2.If device memory to be emptied, click the 

key; if data not to be cleared, click 

to quit.

5.4 Set Device Clock

Set Device Clock is used to synchronize NT100's internal clock with your computer.

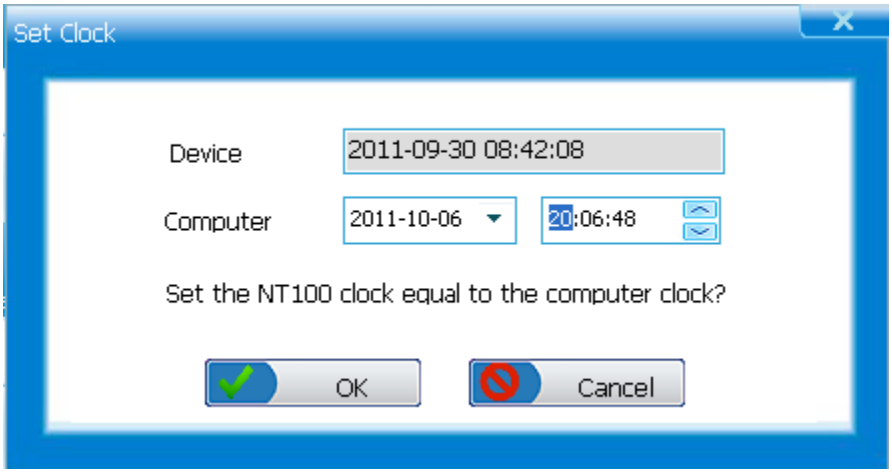
IMPORTANT NT100 collects real time vehicle data. To get correct data, make sure to set the device clock match with your computer time before collecting data from your car.

To set the internal clock:

1.Click the 

icon from 

screen.



2. If the internal clock to set to match the clock on your computer, click the OK key; if not, click the Cancel key to quit and retain the original clock settings.

5.5 Reset Device

Reset Device is used to set the device to manufactory defaults.

To reset the device:

1.Click the icon from Setup screen.

2.If device to be reset, click the OK key; if device not to be reset, click Cancel to quit.

5.6 Set Braking Thresholds

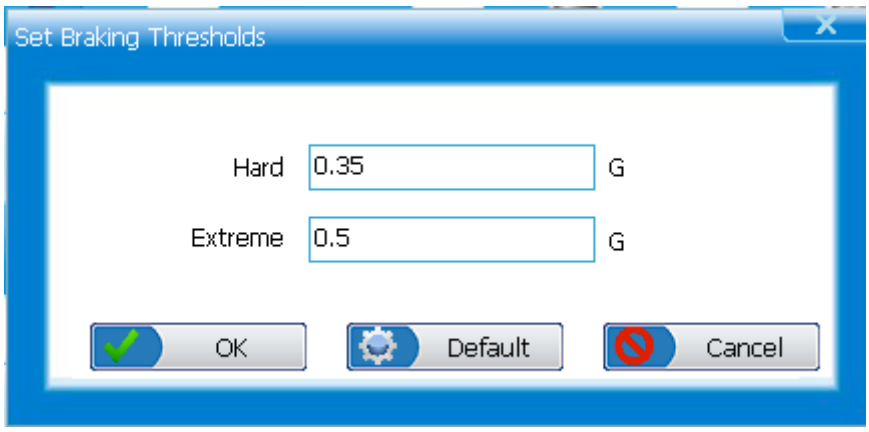
Braking is used to create the braking thresholds that determine hard and extreme stops.

√ The default braking thresholds are: 0.35 and 0.50 G (US & Metric) and 3.4 and 4.9 m/s^2 (S.I.).

To create braking thresholds:

1.Click the icon from Setup screen.

2.Enter your desired hard and extreme braking thresholds or click Default to use the manufacturer default settings.



3.If new settings to be saved, click the OK key; if new settings not to be saved, click the Cancel key to quit and retain the previous settings.

5.7 Set Acceleration Thresholds

Acceleration is used to create the acceleration thresholds that determine hard and extreme starts.

√ The default acceleration thresholds are: 0.30 and 0.45 G (US & Metric) and 2.9 and 4.4 m/s^2 (S.I.).

To create acceleration thresholds:

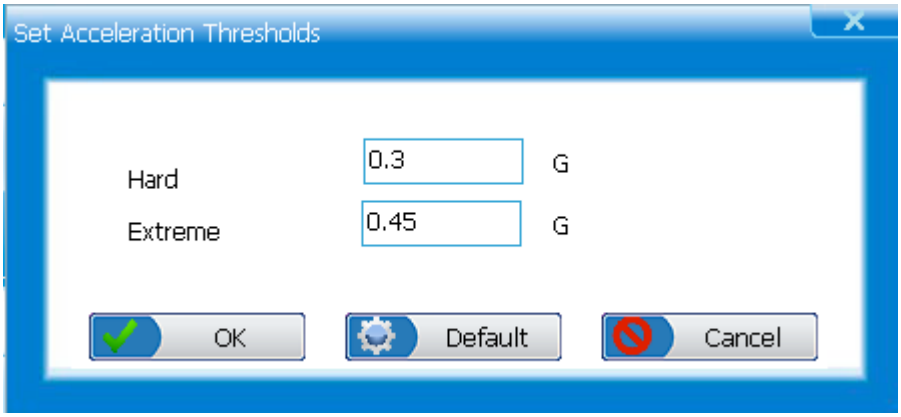
1. Click the 

icon from 

screen.

2. Enter your desired hard and extreme acceleration thresholds or click 

to use the manufacturer default settings.



3. If new settings to be saved, click the 

key; if new settings not to be saved, click the 

key to quit and retain the previous settings.

5.8 Set Speed Bands

Speed Band is used to create speed thresholds for the data logger. The threshold speeds help you identify how much time is spent in each speed band.

To create speed thresholds:

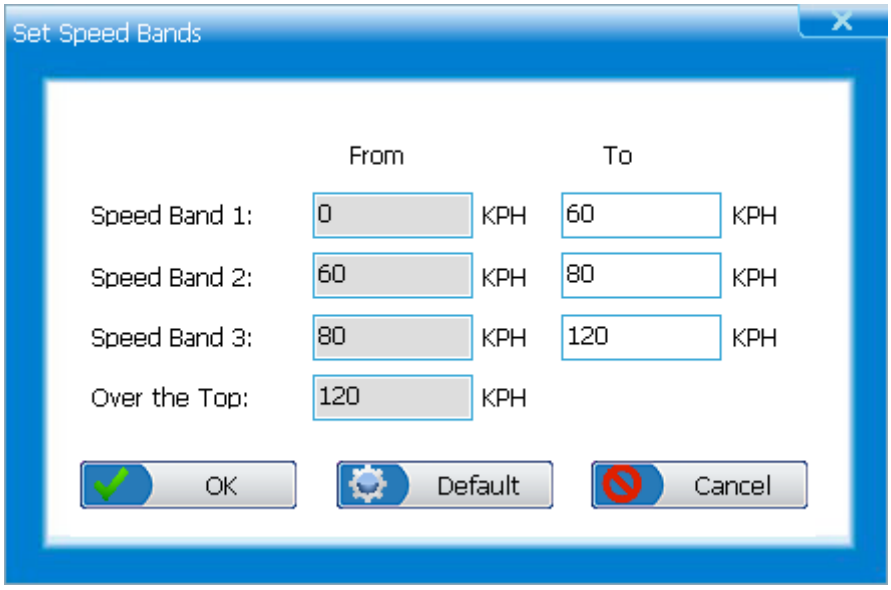
1. Click the 

icon from 

screen.

2. Enter your desired threshold speed for each speed bands or click 

to use the manufacturer default settings.



3. If new settings to be saved, click the OK key; if new settings not to be saved, click the Cancel key to quit and retain the previous settings.

NOTE The top speed band consists of all speeds greater than the last threshold.

5.9 Set Parameter

Set Parameter is used to choose engine parameters to be monitored.

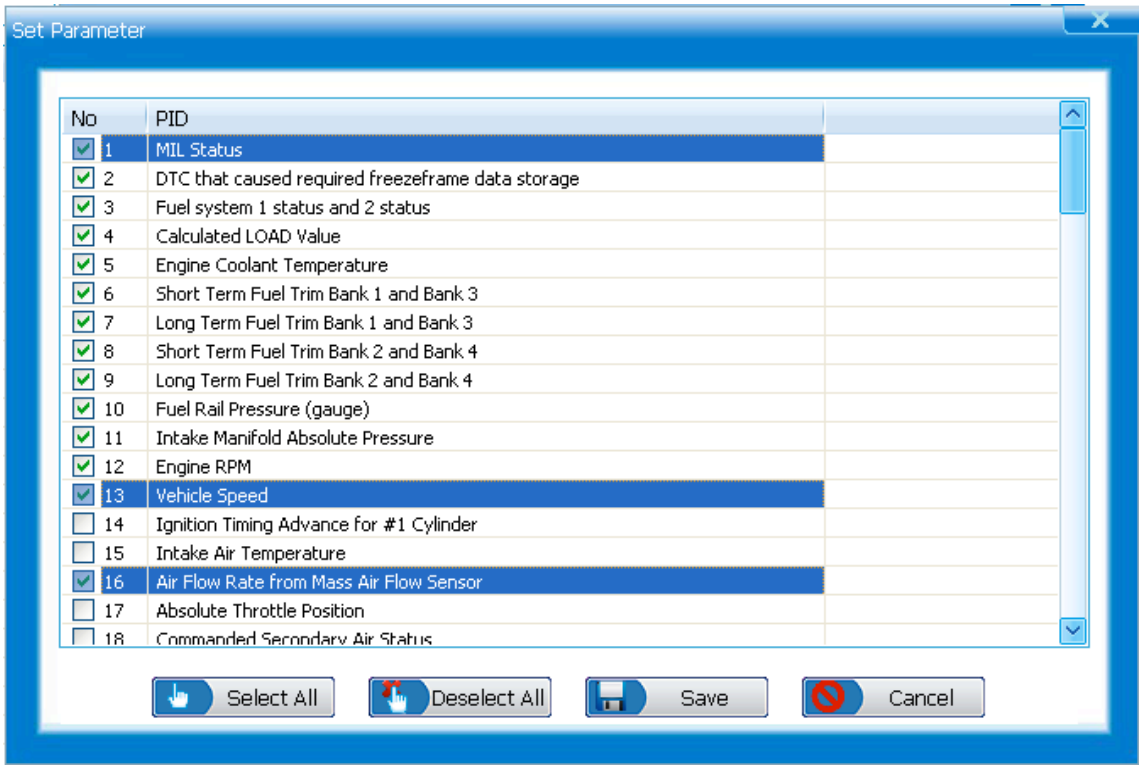
√ NT100 is set to track all supported PIDs by default.

√ MIL, vehicle speed, air flow rate from mass air flow sensor are compulsorily selected PIDs by default.

To choose engine PIDs to be monitored:

1. Click the icon from Setup screen.

2. Use Select All or Deselect All select/deselect all PIDs or click the check box before a PID name to select/deselect a PID. Selected PIDs will be marked with a √ mark.



3. If new settings to be saved, click the Save key; if new settings not to be saved, click the Cancel key to quit and retain the previous settings.

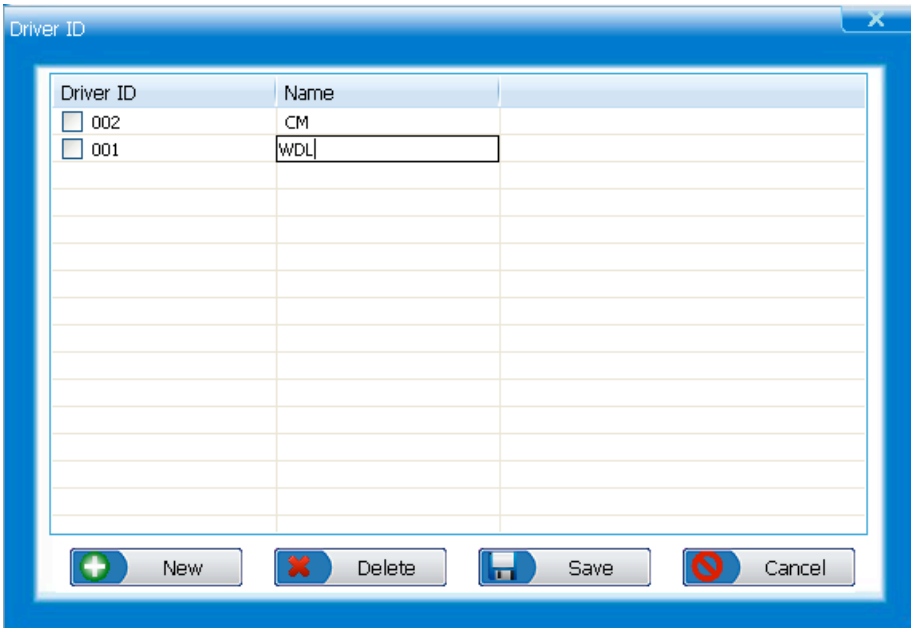
5.10 Driver ID

Driver ID is used to associate a driver with trip information. You are allowed to add, delete, and edit driver IDs.

To configure driver IDs:

1. Click the  icon from  screen.

2. View a list of driver IDs in the ***Driver ID*** dialog box.



3. To edit existing driver information, click the **Name** field for the driver you want to change.

4. Edit the driver name.

NOTE You are not allowed to edit the ID field for the driver IDs. If you would like to change the driver ID of an existing driver, delete the driver ID and add a new one.

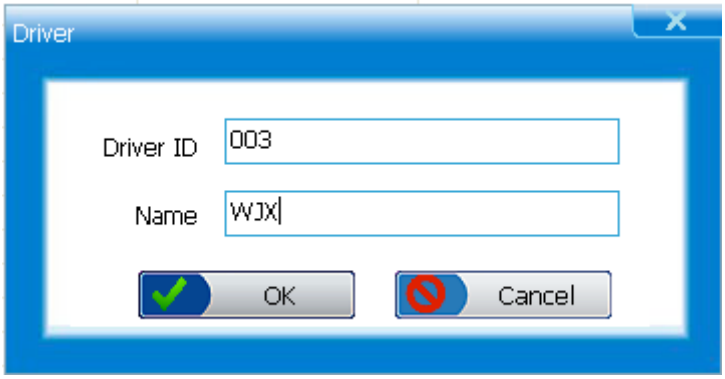
5. If changes to the driver name to be saved, click 

; if changes not to be saved, click 

to exit without saving.

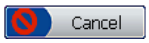
6. To create a new driver, click the 

button.



7. Create a unique name and ID for the new driver.

8. To add the new driver, click 

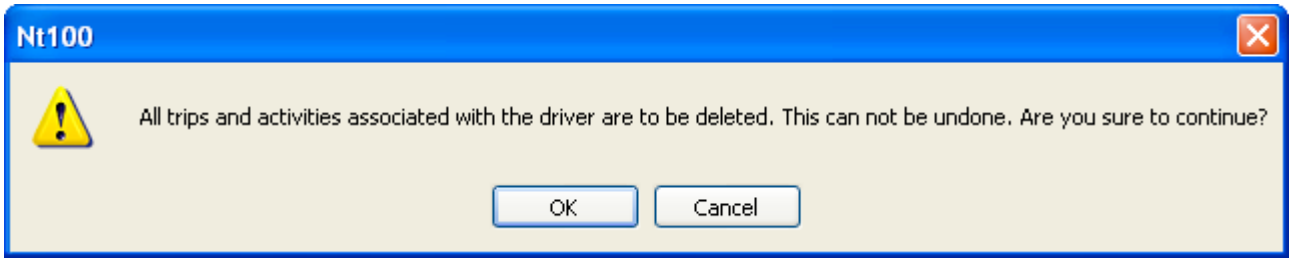
; or click 

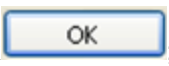
to exit without saving the change.

9. To delete an existing driver ID, select a driver name from the ***Driver ID*** table.

10. Click 

to delete the driver ID from the list.



11. If the driver ID to be deleted, click 

; if the driver ID not to be deleted, click 

to exit.

5.11 Vehicle ID

Vehicle ID is used to associate a vehicle with trip information. You are allowed to add, delete, and edit vehicle IDs.

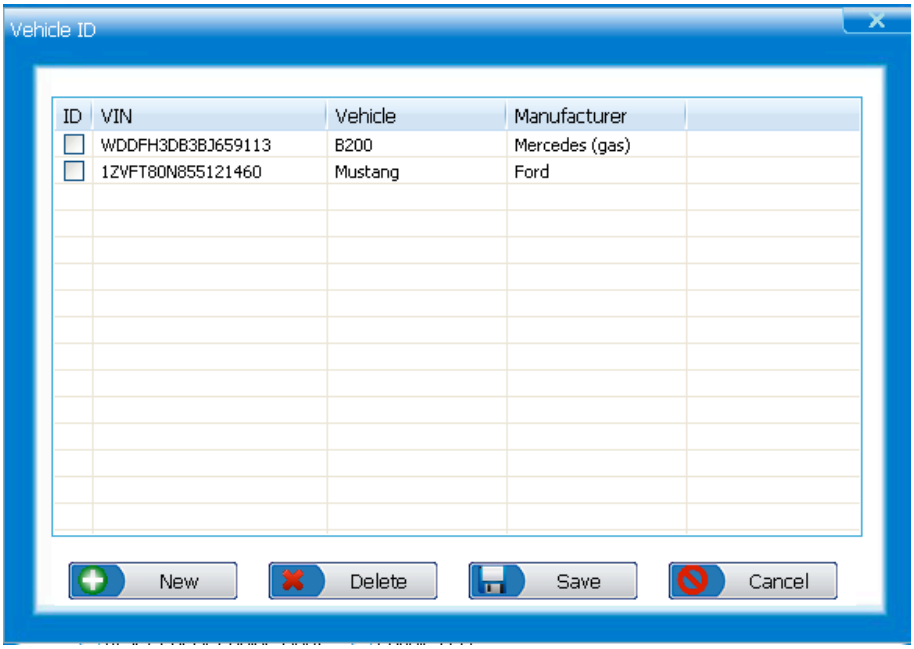
IMPORTNANT: Make sure trip information is associated with correct vehicle; otherwise DTCs may not be matched when there is manufacturer specific code detected.

To configure vehicle IDs:

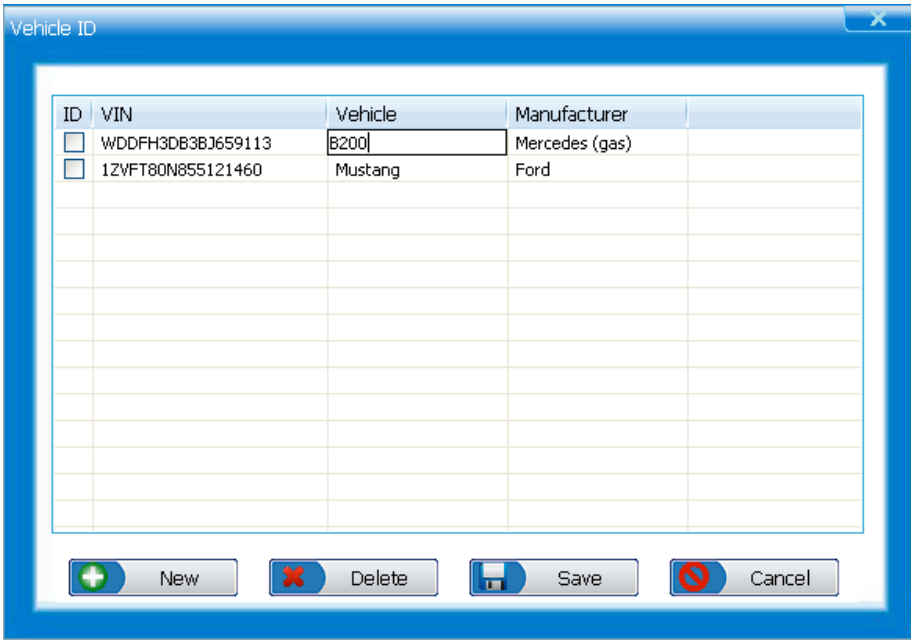
1.Click the  icon from 

screen.

2.View a list of vehicle IDs n the ***Vehicle ID*** dialog box.

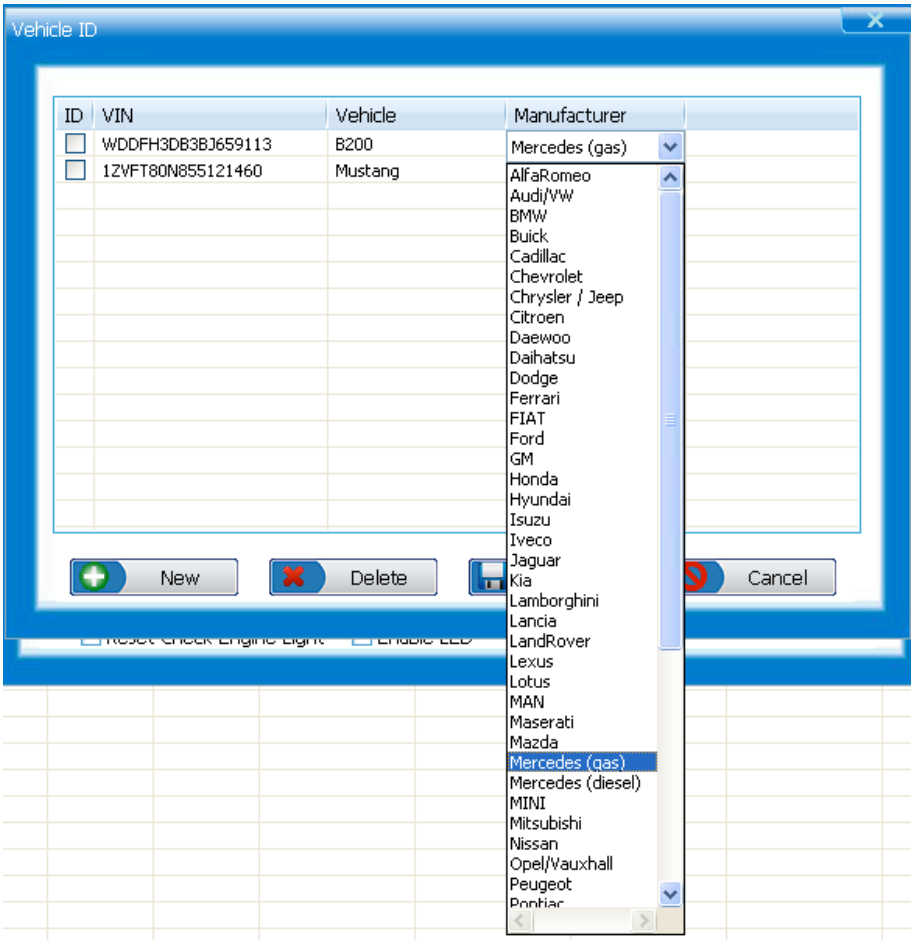


3. To edit existing vehicle information, click the **Name** field for the vehicle you want to change.



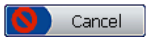
4. Edit vehicle name.

5. To change manufacturer, click the **Manufacturer** field and a drop-down list of manufacturers shows. Select a vehicle manufacturer from the list.



NOTE You are not allowed to edit the VIN field for the vehicle IDs.

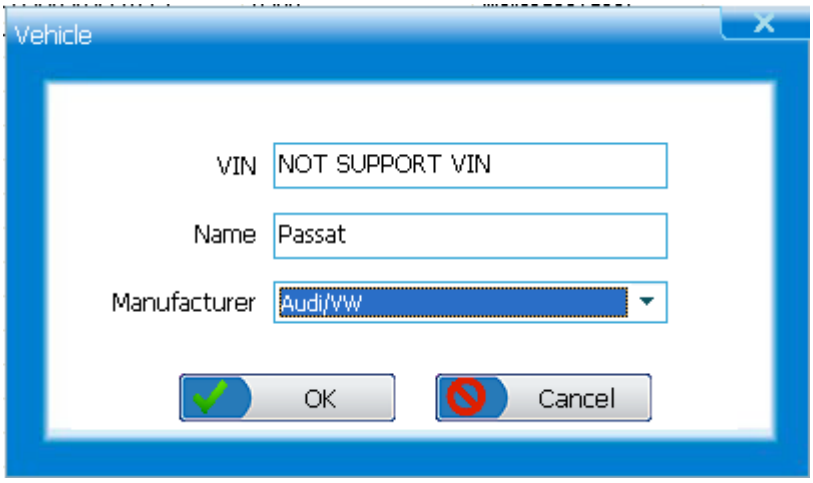
6. If changes to the driver name to be saved, click 

; if changes not to be saved, click 

to exit without saving.

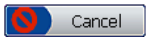
7.To create a new vehicle, click the 

button.



8.Create a unique name or use the vehicle's VIN number to create an ID for the new vehicle.

9.To add the new vehicle, click 

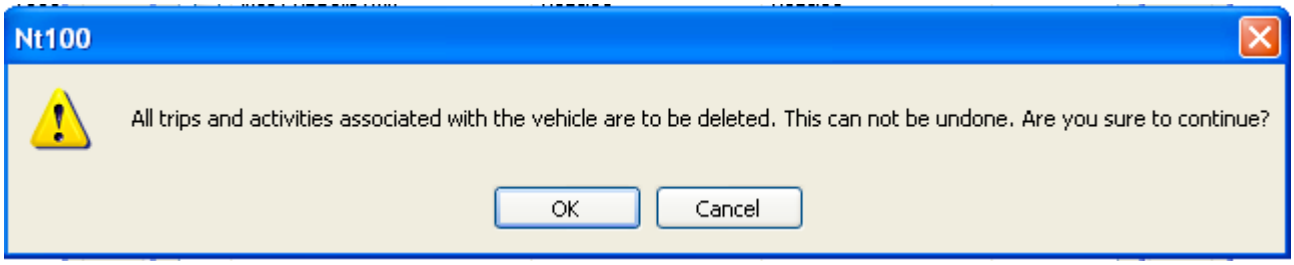
; or click 

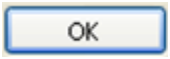
to exit without saving the change.

10. To delete an existing vehicle ID, select a vehicle name from the ***Vehicle ID*** table.

11. Click 

to delete the vehicle ID from the list.



12. If the vehicle ID to be deleted, click 

; if the vehicle ID not to be deleted, click 

to exit.

5.12 Units of Measure


Units is used to change measurement system.

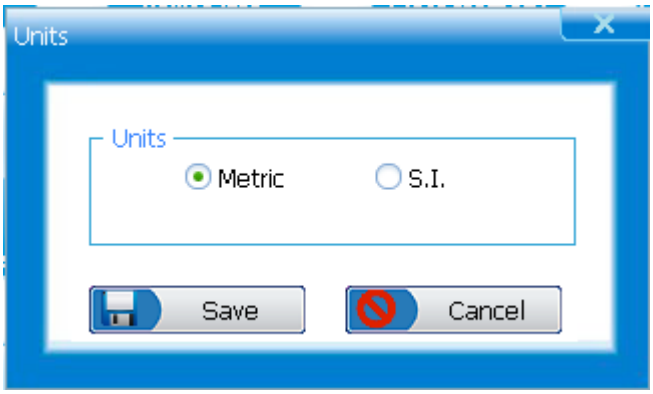
√ Metric is the default measurement unit.

To change measurement unit:

1.Click the  icon from 

screen.

2.Select desired unit system.



3.Click Save to change unit system, or click Cancel to exit without saving the change.

5.13 Reset Check Engine Light

The Reset Check Engine Light ***Reset Check Engine Light*** is used to configure the NT100 data logger to turn off the vehicle Check Engine light next time it is connected to a vehicle.

√ NT100 is set to not to reset MIL by default.

√ Reset the Check Engine Light only after systems have been checked completely.

√ After servicing the vehicle, erase stored DTCs and verify no codes have been reset. If a DTC returns, problem has not been fixed or other faults are present, and the MIL indicator may illuminate again.

√ Depending on which monitor sets a code the vehicle may need to be driven and the monitor ran before concluding that the fault is repaired.

To enable/disable the Reset Check Engine Light function:

1.Click the Reset Check Engine Light checkbox from Setup screen to enable the function on, and the checkbox will be marked with a check mark.

2.To disable the function, click the checkbox again.

5.14 Enable LED

Enable LED ***Enable LED*** is used to control the operation of the LED on NT100 data logger.

√ The LED is enabled by default.

To turn on/off the LED indicator:

1.Click the Enable LED checkbox from Setup screen to enable the LED, and the checkbox will be marked with a check mark.

2.To disable the LED, click the checkbox again.

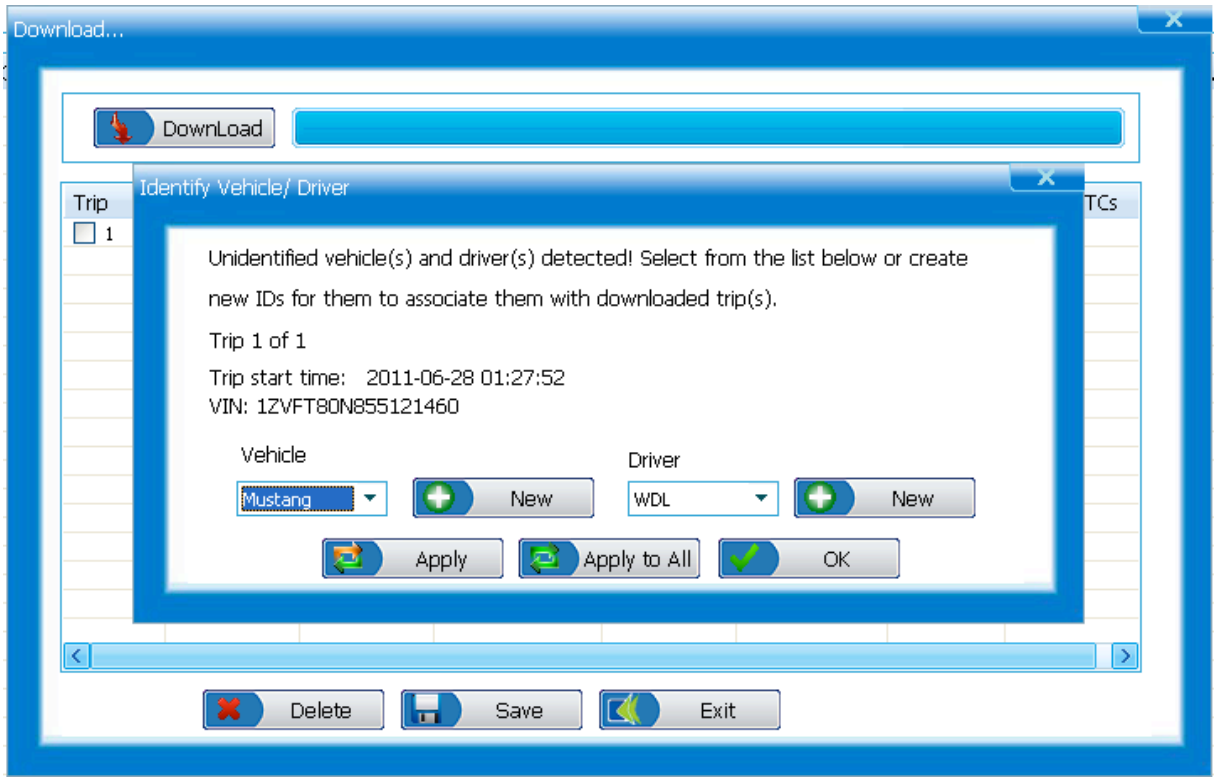
6. Download Data

Download is used to download recorded data from NT100 data logger to your computer.

To download data:

▶ 1.Click the 

icon to download trip details to computer.



2. Select a vehicle and driver from the drop-down lists and use 

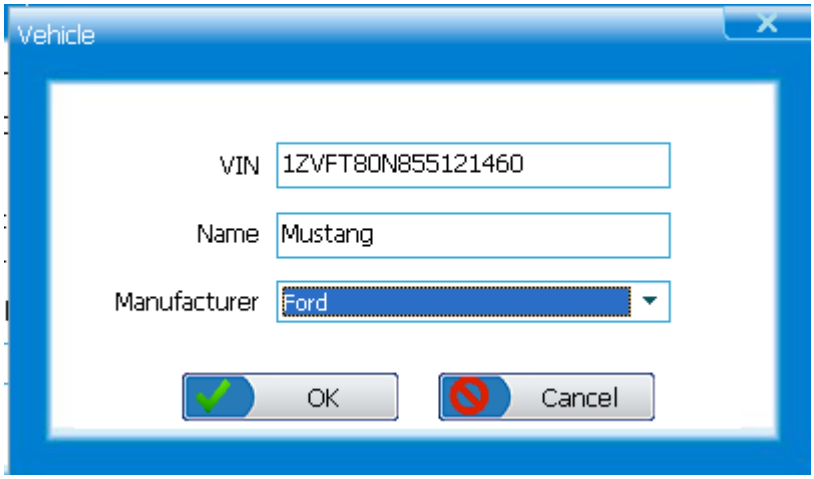
associate each trip with vehicle and driver.

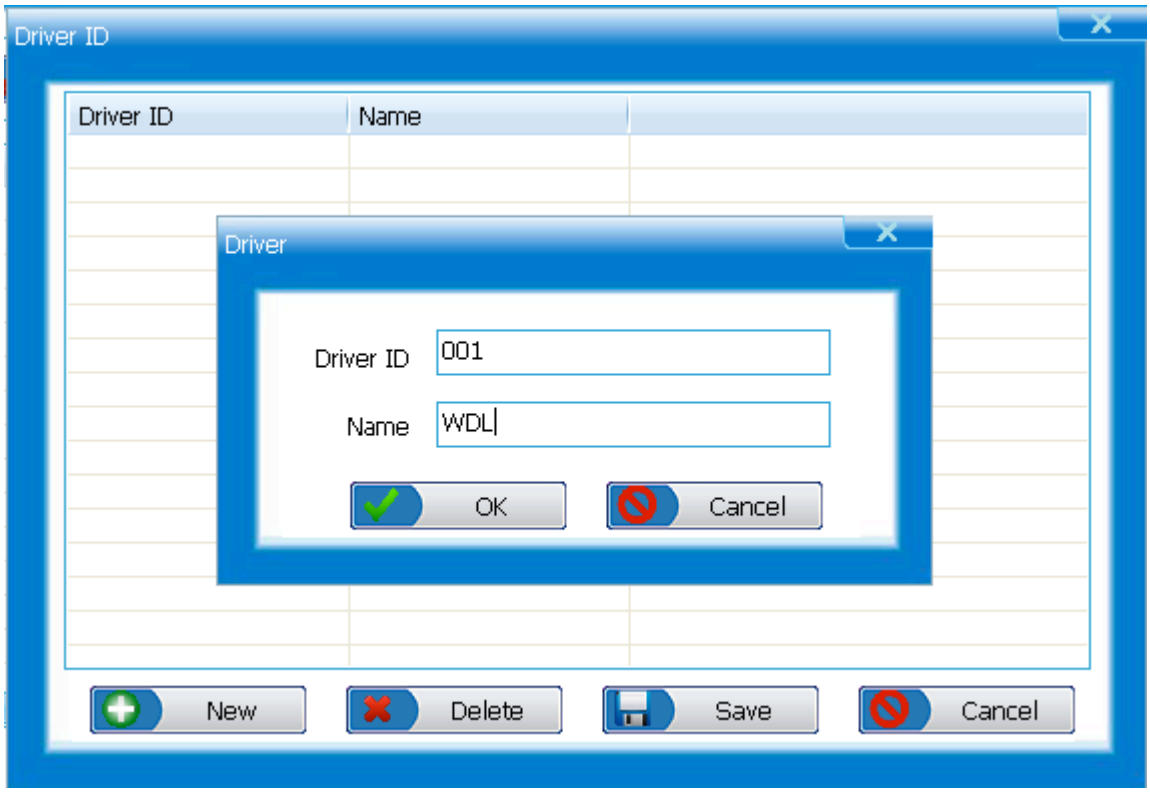
√ If all trips are collected from the same vehicle and driver, use 

.

√ If vehicle or driver is not listed, use the 

button to add a new vehicle or driver.





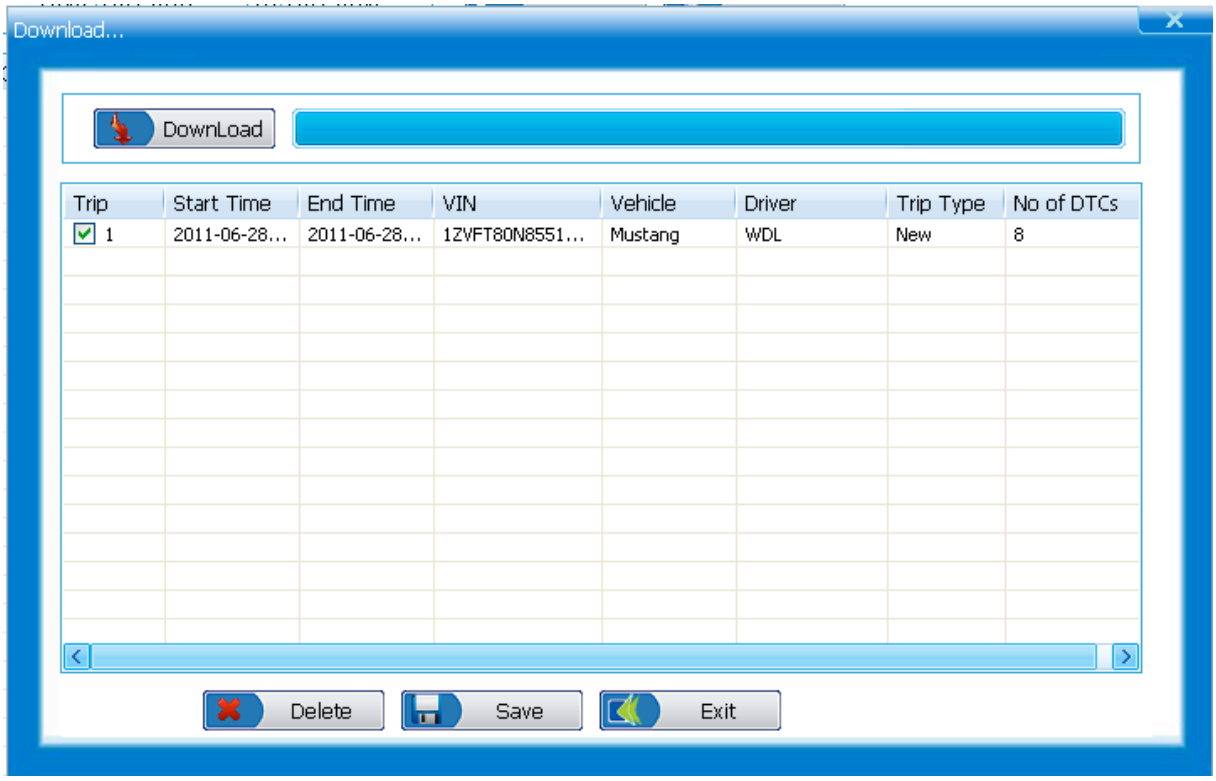
IMPORTNANT: Make sure trip information is associated with correct vehicle; otherwise DTCs may not be matched when there is manufacturer specific code detected.

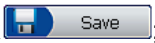
3.Click 

to exit current screen and view a summary of downloaded trip(s).

4.To delete download trip, select a trip and click 

.



5. If downloaded trip(s) to be saved to database, click 

; if trip(s) not to be saved, click 

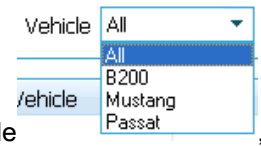
to exit without saving.

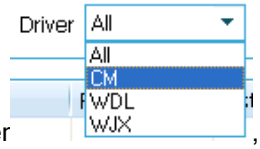
7. Home Page View

Home displays summary information of vehicles, and drivers associated with the data management software. You are allowed to access detailed summaries for every vehicle and driver in a specific period of time.

To view summaries for every vehicle and driver in a specific period of time:

1. Click the 

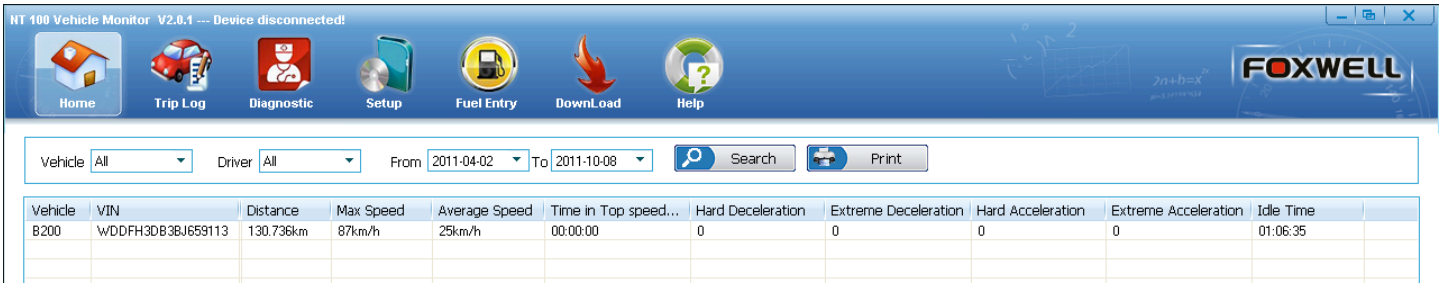
icon.
2. Select data by vehicle 

, driver 

, and date 

.
3. Click 

.
4. View vehicle and driver summary recorded by NT100 in a specific period of time.



8. Trip Log View

The 

displays trip data recorded by NT100. It provides summary view, report view and plot view of trip details.

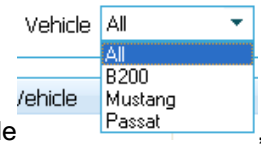
8.1 Trip Log Summary

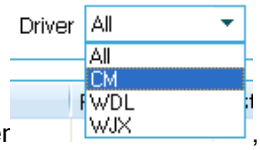
The trip log summary view displays basic information for each trip recorded by NT100, such as distance, start/end time, speeding and hard stats and stops. Also it provides fuel consumption and fuel efficiency of each trip.

To view trip summary:

1.Click the 

icon.

2.Select data by vehicle 

, driver 

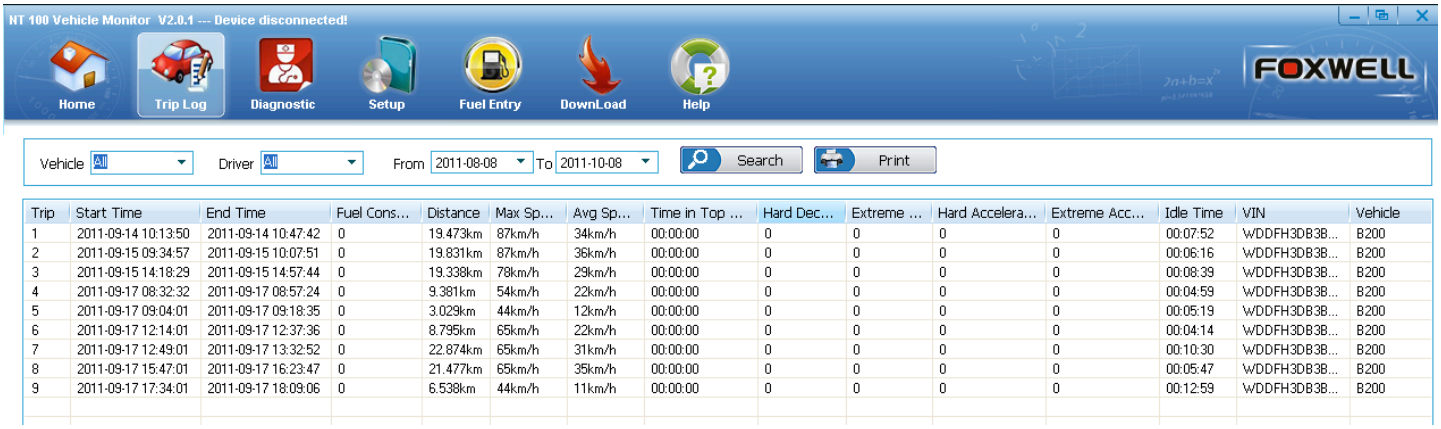
, and date 

.

3.Click 

.

4.View trip summary information.



Trip	Start Time	End Time	Fuel Cons...	Distance	Max Sp...	Avg Sp...	Time in Top ...	Hard Dec...	Extreme ...	Hard Accelera...	Extreme Acc...	Idle Time	VIN	Vehicle
1	2011-09-14 10:13:50	2011-09-14 10:47:42	0	19.473km	87km/h	34km/h	00:00:00	0	0	0	0	00:07:52	WDDFH3DB3B...	B200
2	2011-09-15 09:34:57	2011-09-15 10:07:51	0	19.831km	87km/h	36km/h	00:00:00	0	0	0	0	00:06:16	WDDFH3DB3B...	B200
3	2011-09-15 14:18:29	2011-09-15 14:57:44	0	19.338km	78km/h	29km/h	00:00:00	0	0	0	0	00:08:39	WDDFH3DB3B...	B200
4	2011-09-17 08:32:32	2011-09-17 08:57:24	0	9.381km	54km/h	22km/h	00:00:00	0	0	0	0	00:04:59	WDDFH3DB3B...	B200
5	2011-09-17 09:04:01	2011-09-17 09:18:35	0	3.029km	44km/h	12km/h	00:00:00	0	0	0	0	00:05:19	WDDFH3DB3B...	B200
6	2011-09-17 12:14:01	2011-09-17 12:37:36	0	8.795km	65km/h	22km/h	00:00:00	0	0	0	0	00:04:14	WDDFH3DB3B...	B200
7	2011-09-17 12:49:01	2011-09-17 13:32:52	0	22.874km	65km/h	31km/h	00:00:00	0	0	0	0	00:10:30	WDDFH3DB3B...	B200
8	2011-09-17 15:47:01	2011-09-17 16:23:47	0	21.477km	65km/h	35km/h	00:00:00	0	0	0	0	00:05:47	WDDFH3DB3B...	B200
9	2011-09-17 17:34:01	2011-09-17 18:09:06	0	6.538km	44km/h	11km/h	00:00:00	0	0	0	0	00:12:59	WDDFH3DB3B...	B200

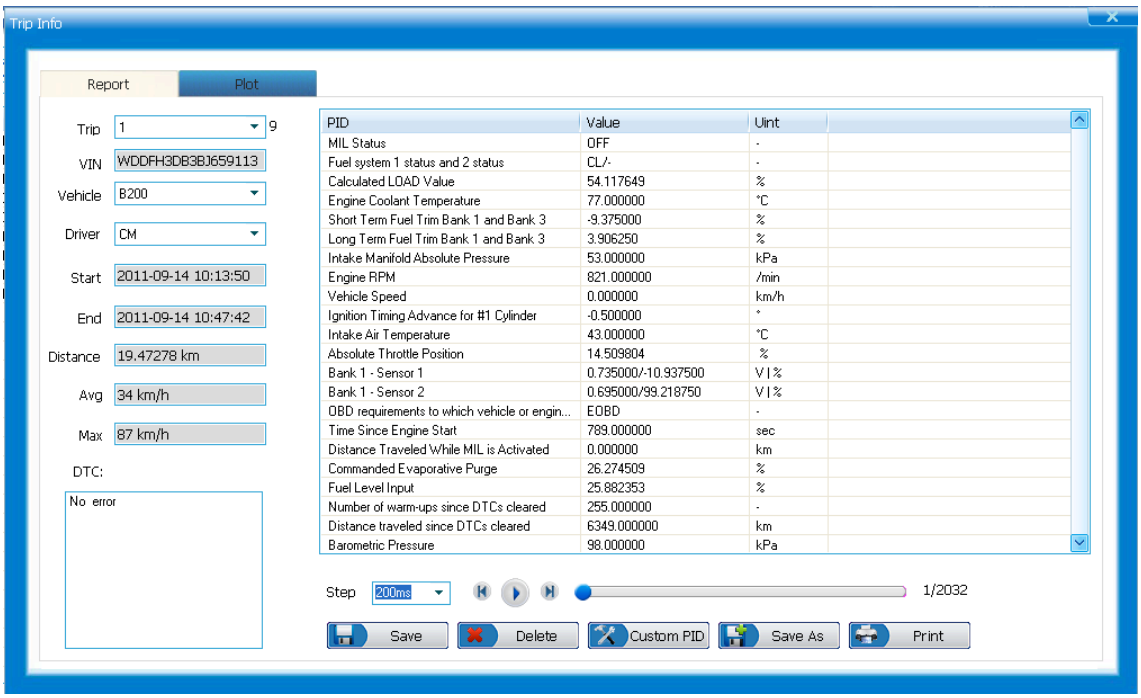
8.2 Trip Report View

The trip report displays detailed trip information for each trip, including all supported engine parameters, recorded by NT100. You are also allowed to get access to trouble information when there is DTC(s) detected.

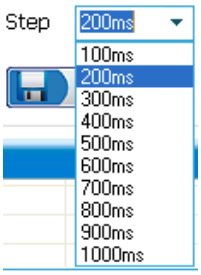
To view trip log report with complete PIDs:

1.Double click a trip that you are interested in from trip summanry screen.

2.View trip details of the selected trip.



3. To view data of different frame, use the play button.



4. To change play speed, select from the Step drop-down list to change.

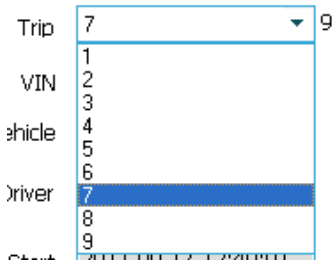
√ 

xxx ms indicates the software plays data at the speed of 1frame/xxx ms.

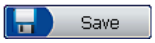
5. Use to scroll data back to the first frame or use to scroll data forth to the last frame. You are allowed to move the cursor to a desired place to view.

6. To stop playing of data, use the button.

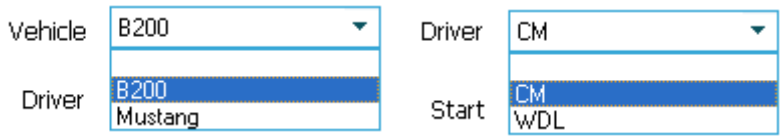
7. To view data of another trip, select from the Trip drop-down list as illustrated below.



√ You are allowed to use the up and down arrow keys of your computer keyboard to scroll through trip records.

8. If incorrect vehicle and/or driver are associated with the trip, use the drop-down lists to change and then click 

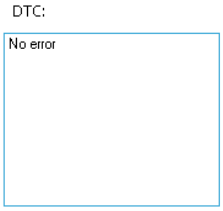
to save the changes.



IMPORTNANT: Make sure trip information is associated with correct vehicle; otherwise DTCs may not be matched when there is manufacturer specific code detected.

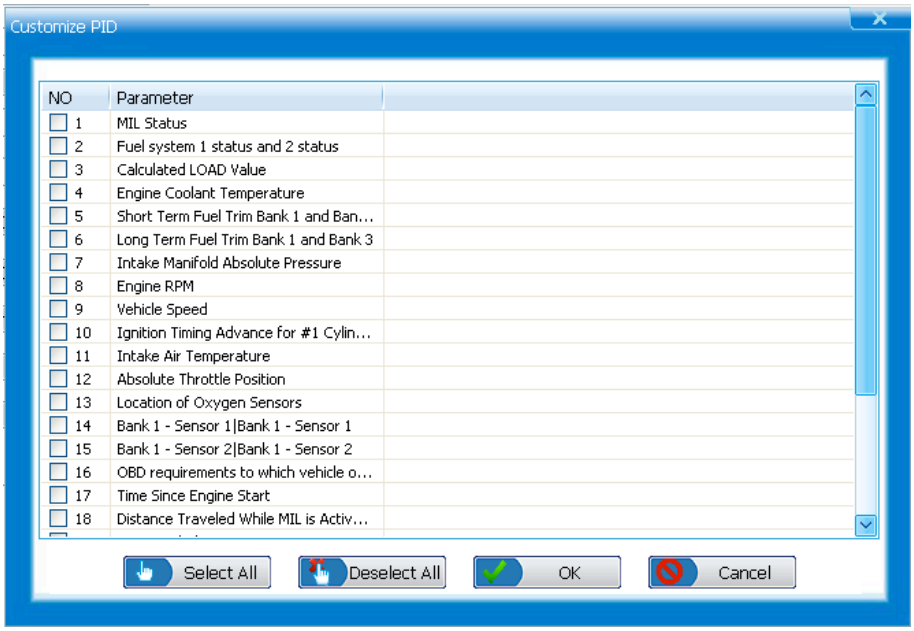
9. If current trip data to be saved and exported to spreadsheet, use the Save As button.
10. If current trip data to be deleted, use the Delete button.
11. If data of current trip to be printed, use the Print button.
12. When there is error detected in the engine control unit, all DTCs and detected time shows in the dialog box at the lower left part of the screen.

√ If no error detected, a “No error” message displays.



To view trip log report with customized PIDs:

1. To view a customized list of PIDs, use the Custom PID button.
2. Click the checkbox to sellect/deselect PIDs.



√ Click Select All or Deselect All to select/deselect all items.

3. To save the selections, click the OK button to confirm; if changes are not to be saved, use Cancel to quit and return to previous screen.

4. View selected PID data.

8.3 Trip Plots

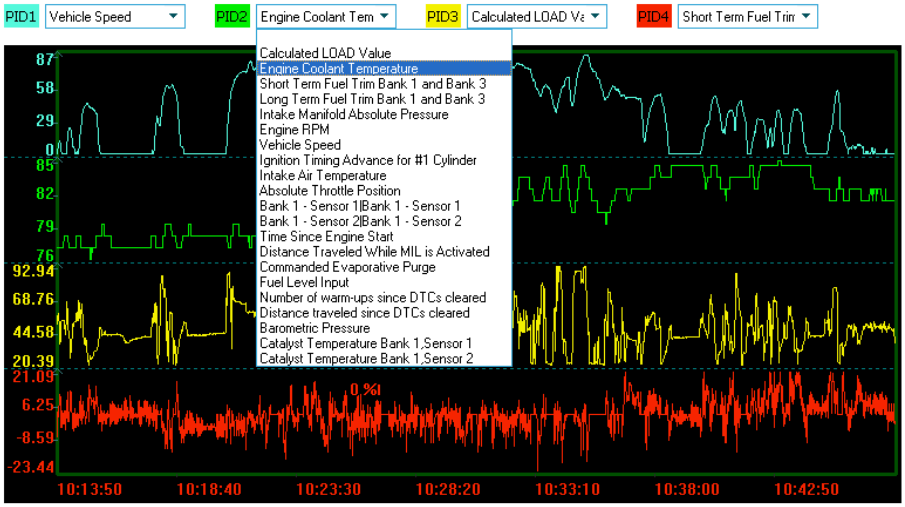
The plot view displays line graphs of supported PIDs for each trip recorded by NT100. 4 PID plots are displayed in one screen, and they are able to be merged for easy and intuitive diagnosis and analysis. If you are especially interested in a specific PID, you are also allowed to maximize the plot by double click the plot.

To view trip log plots:

1. Double click a trip that you are interested in from trip summary screen.

2. Click the Plot tab to view.

3. To change different PID plots, select from one of the PID drop-down list.

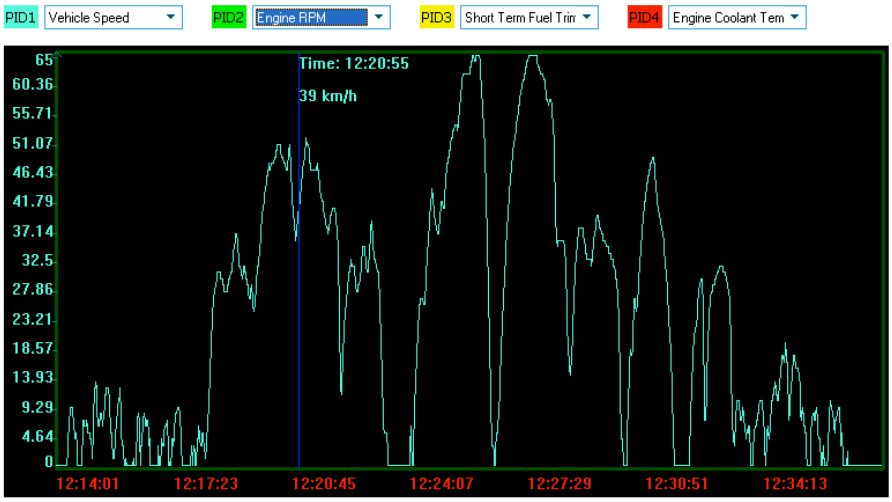


4. Use ZoomIn or ZoomOut to view larger or smaller plots.

5. Use  to restore plots to their original size.

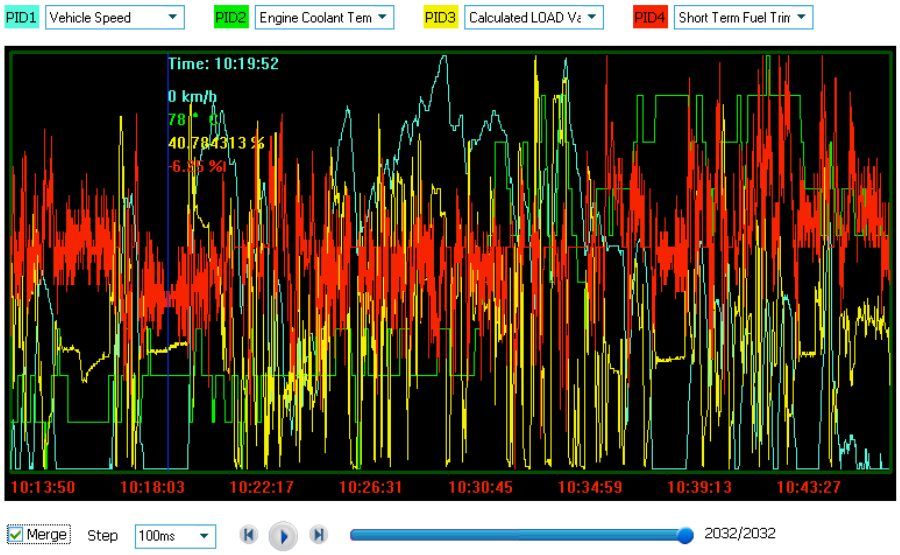
6. To view PID value, put the cursor to any place of the plots.

7. To maximize a plot, just double click you desired one with your left mouse key.



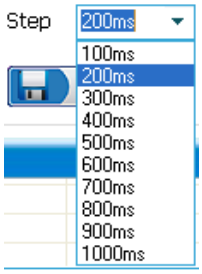
8. Double click the maximized plot to return.

9. To merge 4 plots into one coordinate to compare and analyze, just click the check-box  .



10. To undo merge, click the check-box  again to return.

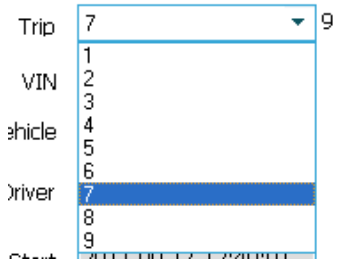
11. When plot is not able to be displayed in one screen, use the  play button.

12. To change play speed, select from the Step drop-down list to  change.

13. Use  to scroll plots back to the first frame or use  to scroll forth to the last frame. Also you are allowed to

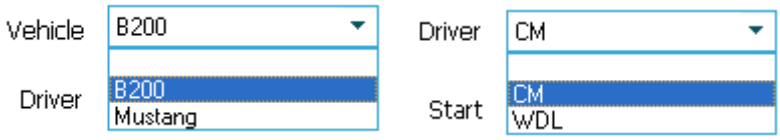
move the cursor to a desired place to view.

14. To stop playing of plots, use the button.
15. To view data of another trip, select from the Trip drop-down list as illustrated below.



√ You are allowed to use the up and down arrow keys of your computer keyboard to scroll through trip records.

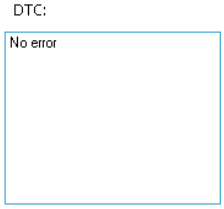
16. If incorrect vehicle and/or driver are associated with the trip, use the drop-down lists to change and then click Save to save the changes.



IMPORTNANT: Make sure trip information is associated with correct vehicle; otherwise DTCs may not be matched when there is manufacturer specific code detected.

17. If plots to be saved and exported to spreadsheet, use the Save As button.
18. If plots to be deleted, use the Delete button.
19. If plots to be printed, use the Print button.
20. When there is error detected in the engine control unit, all DTCs and detected time shows in the dialog box at the lower left part of the screen.

√ If no error detected, a “No error” message displays.



9. Diagnostic View

Diagnostic allows you to:

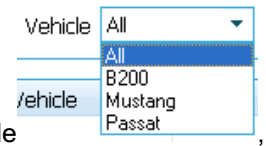
- Read DTCs.
- View freeze data.
- View I/M Readiness data

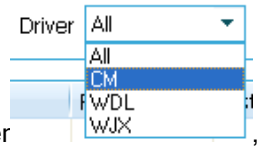
9.1 Diagnostic Summary

Diagnostics summary view displays trouble summaries for each trip detected by NT100 data logger.

1. Click the 

icon.

2. Select data by vehicle 

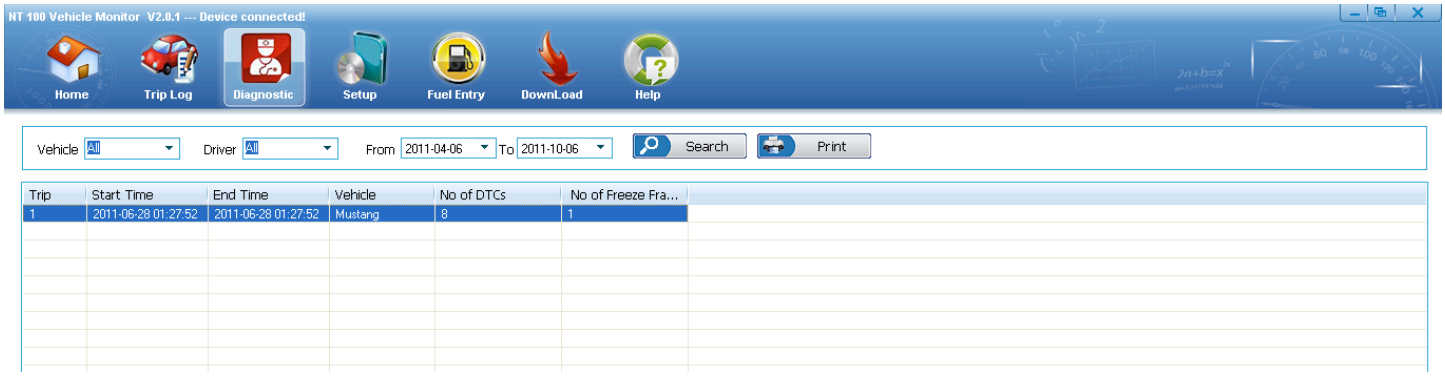
, driver 

, and date From 2011-01-06 To 2011-10-06 .

3. Click 

.

4. View trip summary information.



9.2 I/M Readiness Status Data

I/M Readiness function is used 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 (each monitor has specific driving conditions and time required), the computer's monitors decide if the vehicles emission system is working correctly 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.

√ I/M Readiness function is performed with the KOER or KOEO.

√ There are two types of I/M Readiness test

- 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.

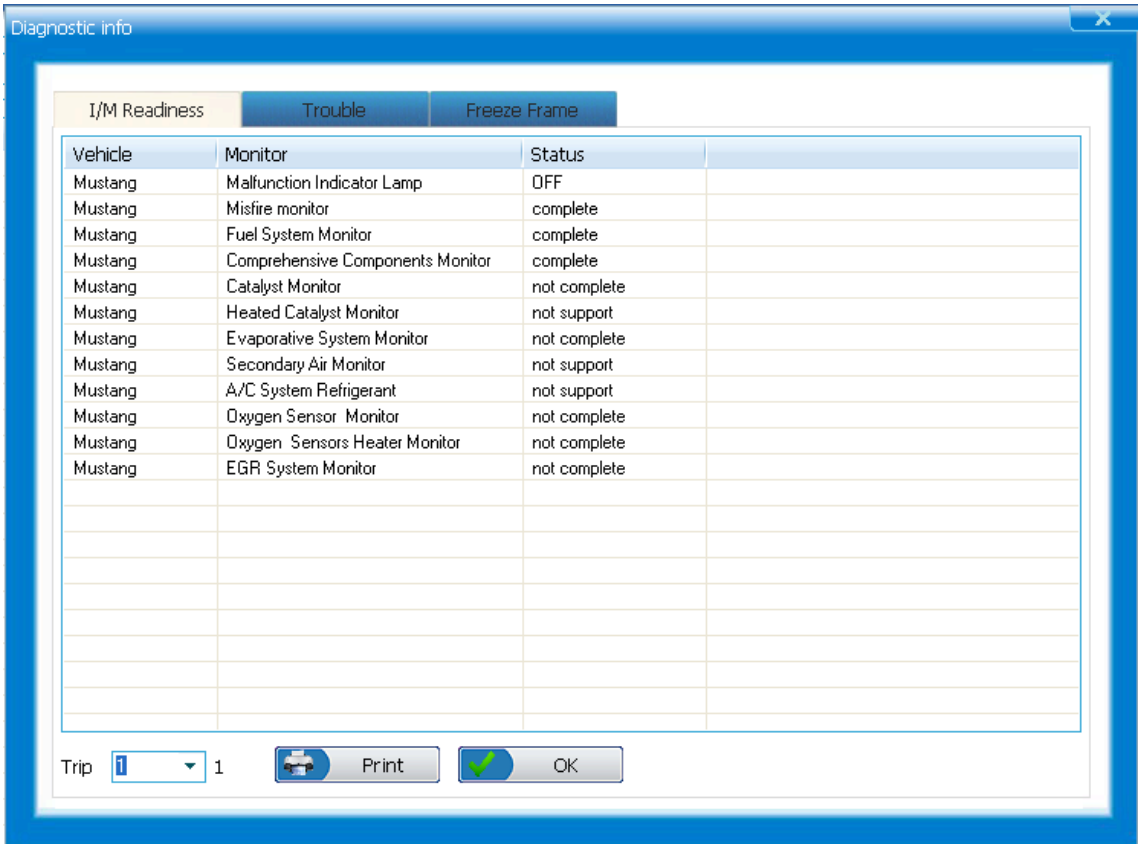
√ Below is a list of abbreviations and names of OBD II monitors supported by the Data logger.

No.	Abbreviation	Name
1	Misfire Monitor	Misfire Monitor
2	Fuel System Mon	Fuel System Monitor
3	Comp. Component	Comprehensive Components Monitor
4	Catalyst Mon	Catalyst Monitor
5	Htd Catalyst	Heated Catalyst Monitor
6	Evap System Mon	Evaporative System Monitor
7	Sec Air System	Secondary Air System Monitor
8	A/C Refrig Mon	Air Conditioning Refrigerant Monitor
9	Oxygen Sens Mon	Oxygen Sensor Monitor
10	Oxygen Sens Htr	Oxygen Sensor Heater Monitor
11	EGR System Mon	Exhaust Gas Recirculation System Monitor

NOTE Not all monitors are supported by all vehicles.

To view I/M Readiness status:

1.Double click a trip that you are interested in from diagnostic summary screen.



2.View I/M status information of selected trip.

3.To view data of another trip, select from the drop-down list as illustrated below.

√ You are allowed to use the up and down arrow keys of your keyboard to scroll through trip records.

4.If data to be printed, use the Print button.

5.To quit the report view and return to ***Diagnostic Summary*** screen, click OK button.

9.3 Trouble Codes

Trouble shows fault codes detected by NT100 data logger.

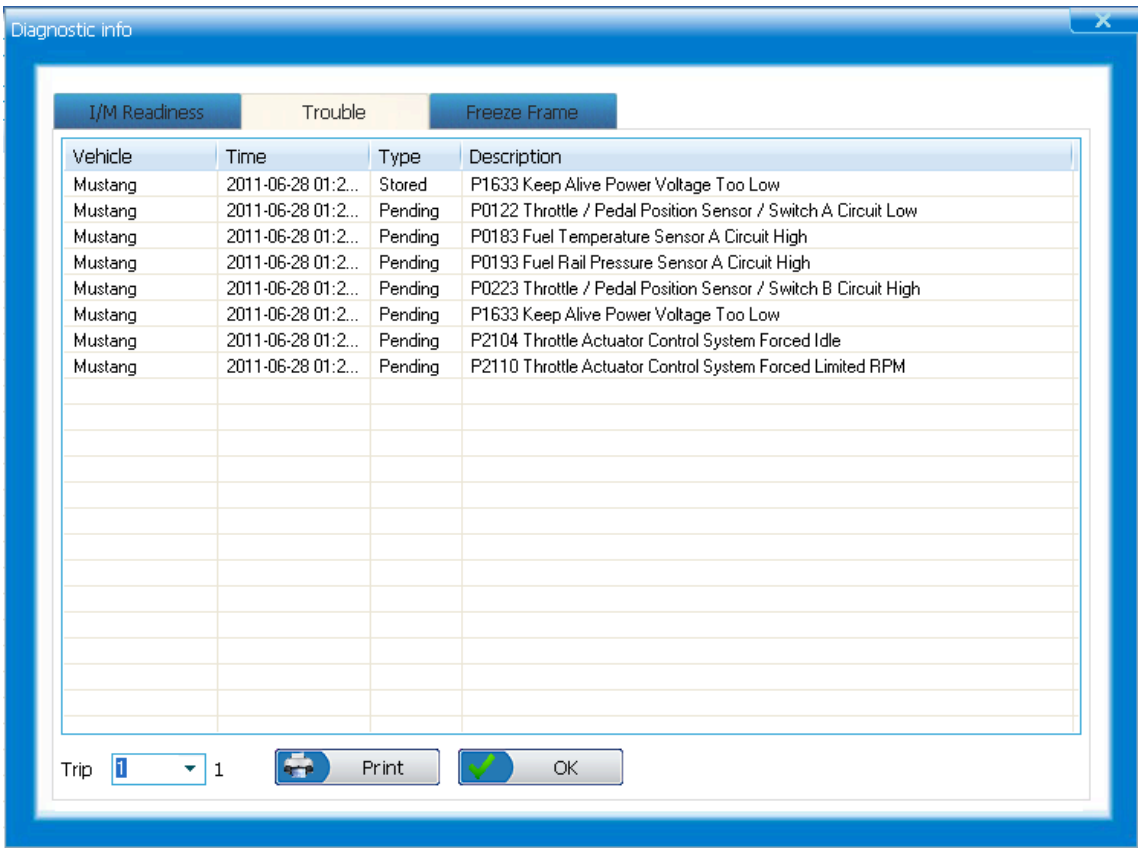
√ When emission-related or drivability fault occurs the control module illuminates the malfunction indicator lamp (MIL).

√ Pending codes are also referred to as continuous monitor or 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 fault occurs a specific number of times, the code matures into a DTC and the MIL illuminates or blinks.

To view trouble details:

1.Double click a trip that you are interested in from diagnostic summary screen.

2.Click the Trouble tab to view trouble codes.



3.To view data of another trip, select from the Trip drop-down list as illustrated below.

√ You are allowed to use the up and down arrow keys of your keyboard to scroll through trip records.

4.If data to be printed, use the Print button.

5.To quit the report view and return to ***Diagnostic Summary*** screen, click OK button.

9.4 Freeze Data

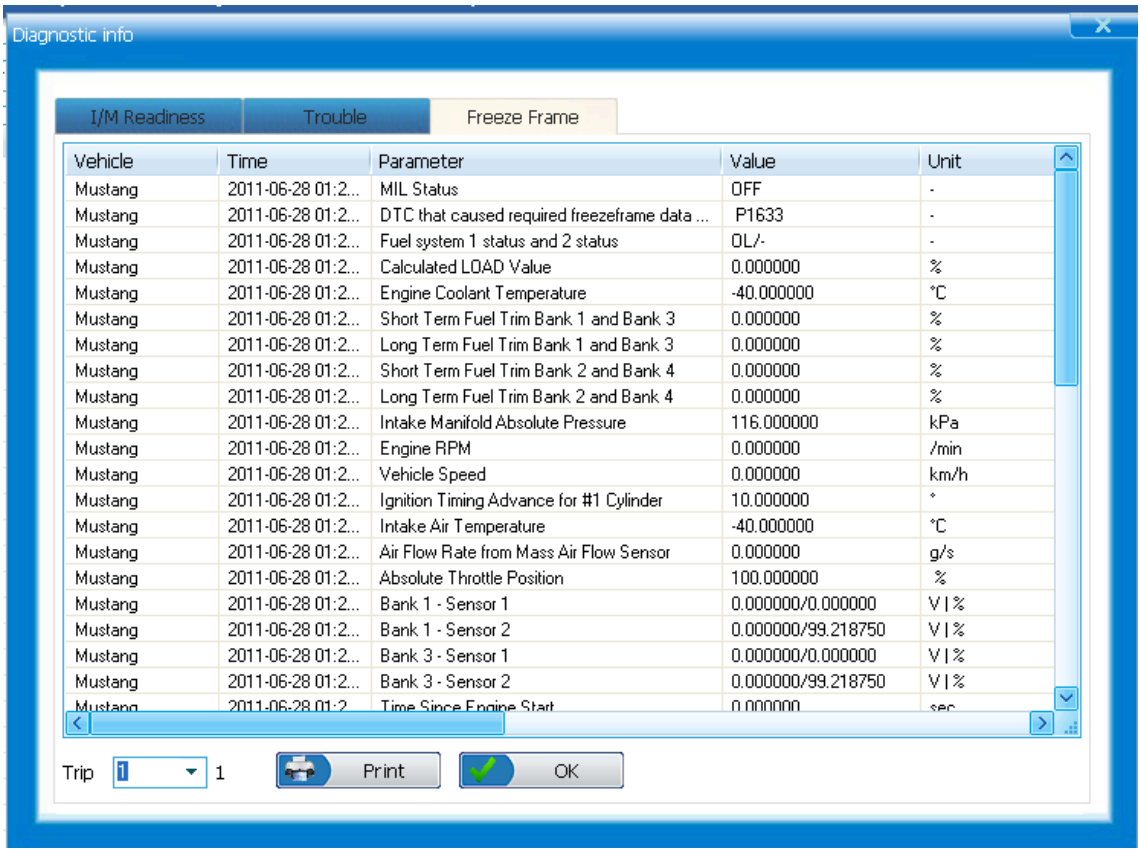
Freeze Frame function is used to view freeze frame data, a snapshot of vehicle operating conditions recorded by the on-board computer at the time of an emission-related fault.

√ If codes were cleared, freeze data may not be stored in vehicle memory depending on vehicle.

To view freeze frame data:

1. Double click a trip that you are interested in from diagnostic summary screen.

2. Click the Freeze Frame tab to view freeze data.



3. To view data of another trip, select from the Trip drop-down list as illustrated below.

√ You are allowed to use the up and down arrow keys of your keyboard to scroll through trip records.

4. If data to be printed, use the Print button.

5. To quit the report view and return to ***Diagnostic Summary*** screen, click OK button.

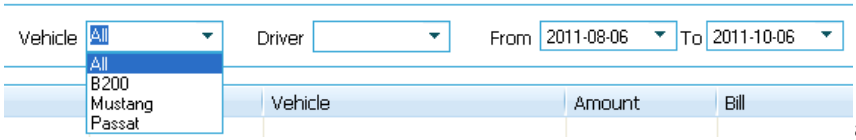
11. Fuel Entry

Fuel Entry is used to set up fuel usage and costs for every vehicle associated with the data management software. Fuel entry information is used to calculate fuel expense.

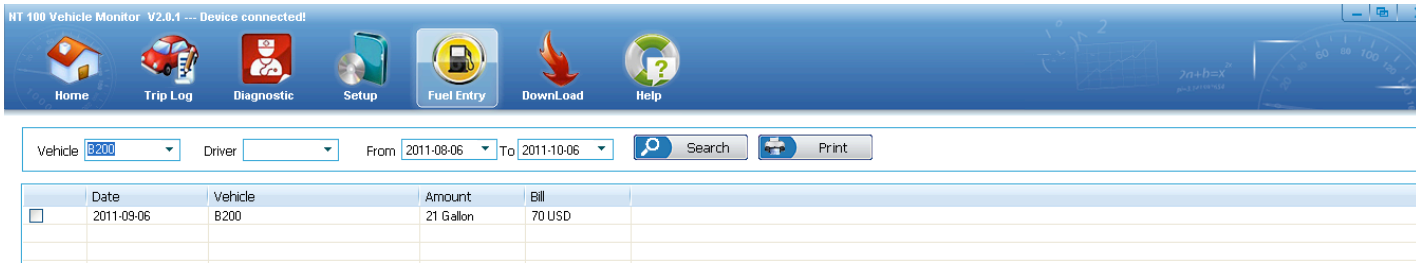
To enter a fuel entry:

1. Click the 

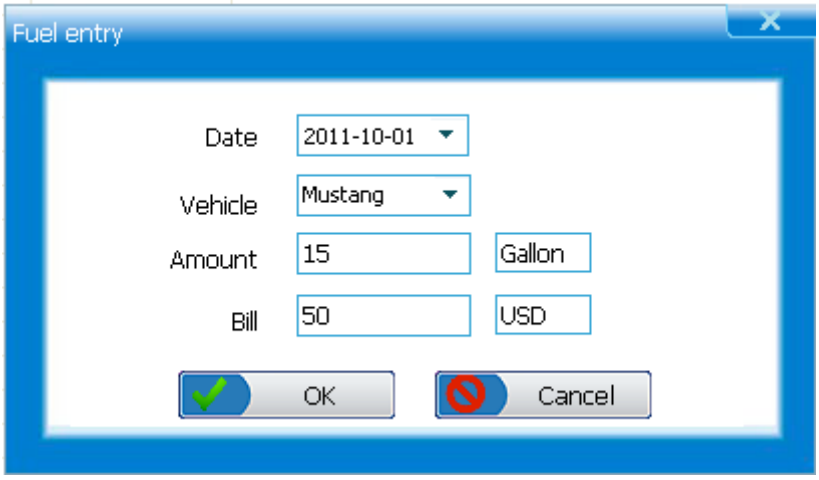
icon.

2. Select vehicle, driver and date 

and then click Search to view a list of fuel entry records in a specific period of time.



3. To add a new fuel entry record, use the New button.



4. Select the date when the fuel was purchased from **Date** box.
5. Select a vehicle from **Vehicle** box.
6. Enter the amount of fuel purchased in **Amount** box.
7. Enter the money paid for the fuel purchase in **Bill** box.
8. The fuel entry information to be saved, click OK button, the fuel entry information not to sved, click the Cancel button to quit without saving.
9. To delete fuel entry record(s), click the check-box before record(s) and then click the Delete button to delete.

12. Troubleshooting

When LED indicator illuminates constantly, please check the following:

- Verify ignition key is in the ON position.
- Make sure NT100 is correctly attached to vehicle's Data Link Connector (DLC).
- Check DLC for cracked or recessed pins, or for any substance that could prevent a good electrical connection.
- Check NT100's OBDII connector for bent or broken pins.
- Make sure the vehicle is OBDII/EOBD compliant.
- Cycle the vehicle key to OFF for 10s and then back to ON.
- Verify battery voltage is at least 8.0V with KOEO.
- Verify that the control module is not defective.