

USER GUIDE FOR EOBD-Facile



Android

www.outilsobdfacile.com

Introduction :

EOBD-Facile is a diagnostic application for cars. It will allow you to read the engine and transmission defects of all vehicles complying with the following OBD standards

- EOBD (Europe)
- OBDII (USA and Canada)
- JOBD (Japan)

To learn more about these standards, please visit this page on our website

www.outilsobdfacile.com/obd-presentation.php

Requirements:

To use EOBD-Easy you must have:

- 1x Bluetooth or WiFi ELM327 interface or a klavkarr device : www.boutiqueobdfacile.com
- 1x phone / tablet with Android version 3.1 or above, with Bluetooth or WiFi capability

Plugging in your ELM327 interface:



First, locate your OBD 16 channel diagnostic connector. This must be in the passenger compartment.

Plug your ELM327 interface on the connector. The red indicator light of the ELM327 and the flickering of the other indicators confirm that the interface is ready to be used.

Struggling to find your OBD connector? Download our OBD location application:



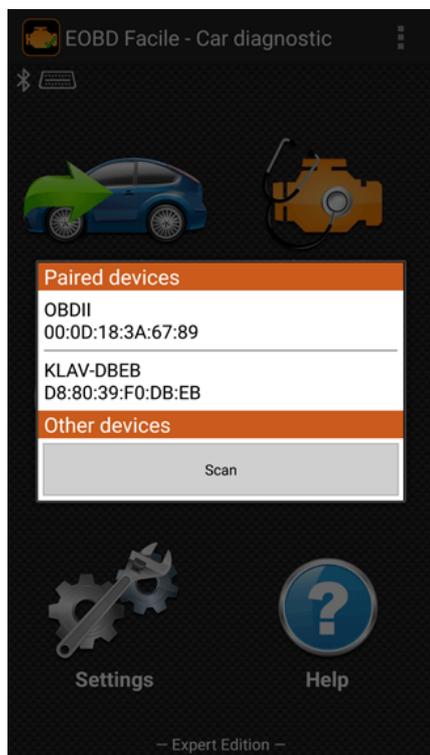
<https://play.google.com/store/apps/details?id=com.outilsobdfacile.obd.connector.dlc>

Or visit our website

www.outilsobdfacile.com/location-plug-connector-obd.php

To establish Bluetooth connection:

After downloading EOBD-Facile to the Play Store, launch it and tap the "Connect" icon from the home screen.



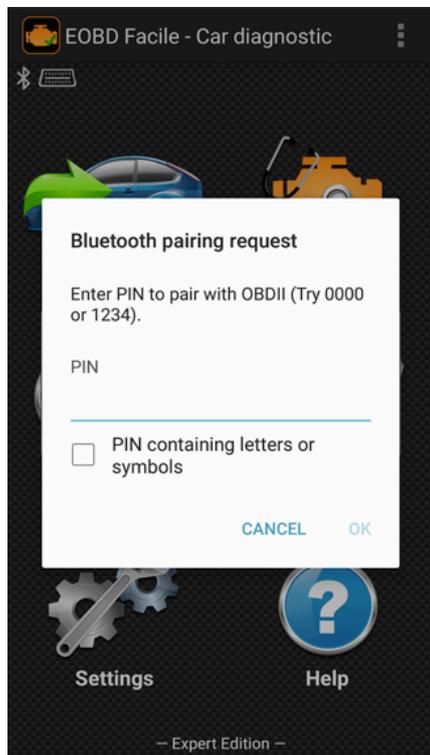
A window appears listing all the devices already associated (paired) to your device.

If you are using your ELM327 for the first time, click the "Scan" button to start a search for new devices

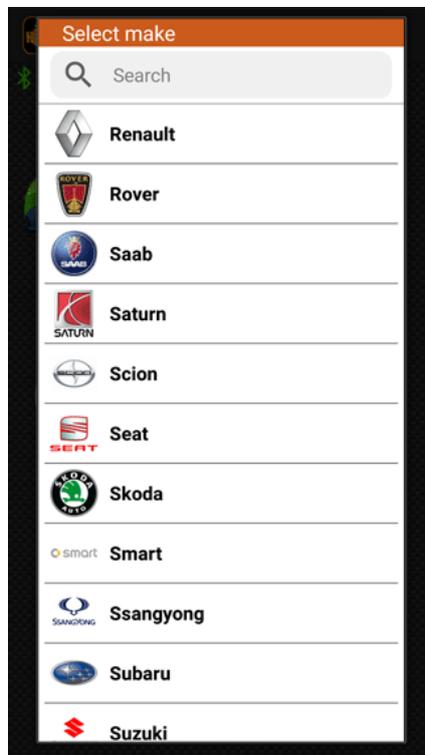
According to the interface you have, the device name may vary. In the example shown, the name is: **OBDII**

Click the name of the device to start the connection to it

For unpaired devices, a PIN code may be requested: type **1234**



PIN request



Bluetooth connected, brand choice

To establish WiFi connection:

By default the application will use Bluetooth. To use a WiFi connection, go to the application settings menu and change the "Connection Type".

ELM327 WiFi uses a specific configuration of the wireless network. To do this go to Android Settings and select the network named

- **WiFiOBD**

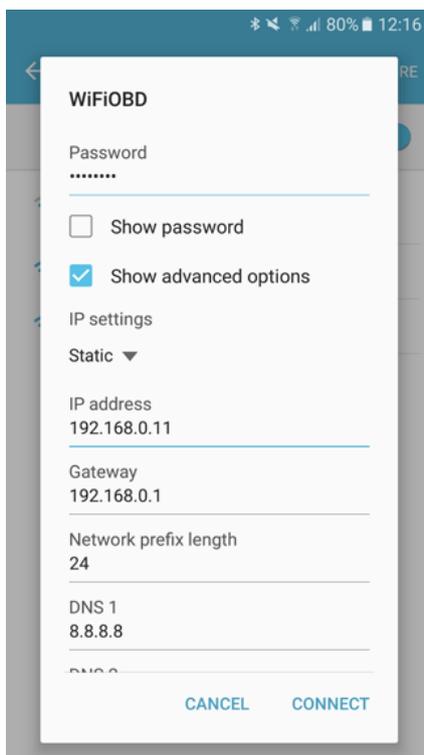
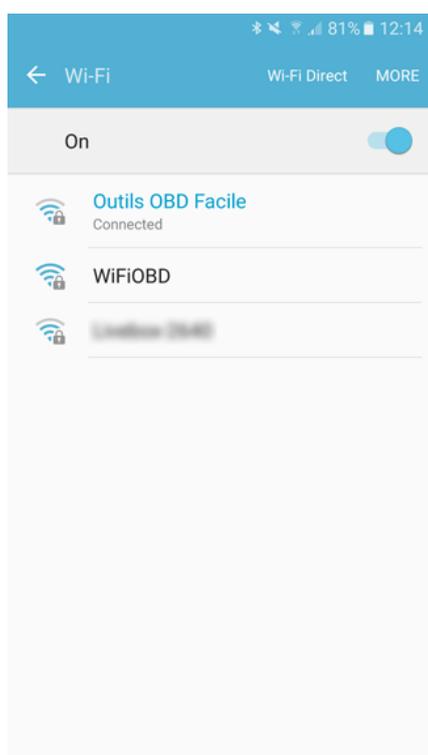
Tap on the line corresponding to WiFiOBD network and enter the following settings

- Password : **12345678**
- Select "**Show Advanced Options**" :
 - IP settings : **static**
 - IP address : **192.168.0.11**
 - Gateway : **192.168.0.1**

Then go back into the application and launch the connection

Note: The setting will be saved by your apparatus; this operation is only necessary at the first connection

Important: When connected to WiFiOBD network, you cannot access the Internet if you do not have a GSM signal (Edge, 2G, 3G or 4G)



To establish USB connection:

From the 3.1 version of Android it is possible, on some devices, to connect a ELM327 USB to your Android phone/tablet using an adapter.

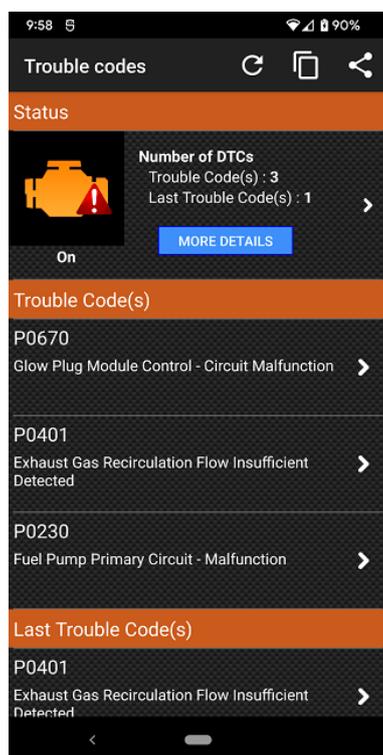
Warning: To operate with a USB, ELM327 requires that the USB is capable of powering the interface through the micro-USB output of the device. **Most manufacturers do not allow this type of function** on phones. Tablets are generally compatible with this type of operation. But as for the phones, some manufacturers have not activated this option.

Go to the application settings to set the "Connection Type". Choose USB.

Exit the application (exit by pressing the back button from the home screen), then plug your ELM327 USB to your Android device. If the ELM327 is recognised, a window prompting you to launch the EOBD-Easy application will be displayed.



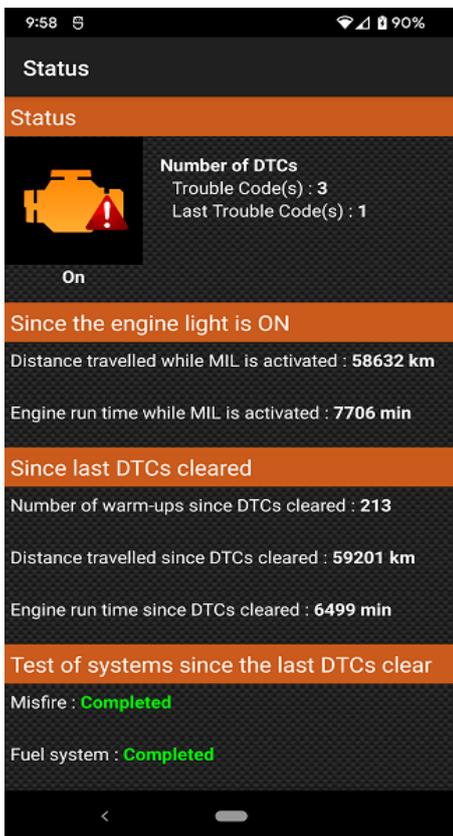
Diagnostic – Status and Troubles codes:



Status are useful to know the current state of electronic diagnostics done in the vehicle. It will report the number of trouble codes, the distance and time made since the DTC is present.

Data troubles codes are classified into 3 types:

- **Trouble Code** : DTC has been detected and confirmed by the ECU several time and is declared as relevant
- **Last Trouble Code**: DTC has been detected once and is not yet relevant.
- **Permanent Trouble code**: DTC has been detected on the vehicle but is not present anymore. Permanent Trouble Code cannot be erased. They are useful to know the history of the vehicle.



Tip: The list of faults will be displayed according the chronological order. Please focus your attention on the first fault, other faults may be the consequence of the first one.

It is possible to save diagnostic result with the tool bar button. Saved diagnostic will be available through the History menu.

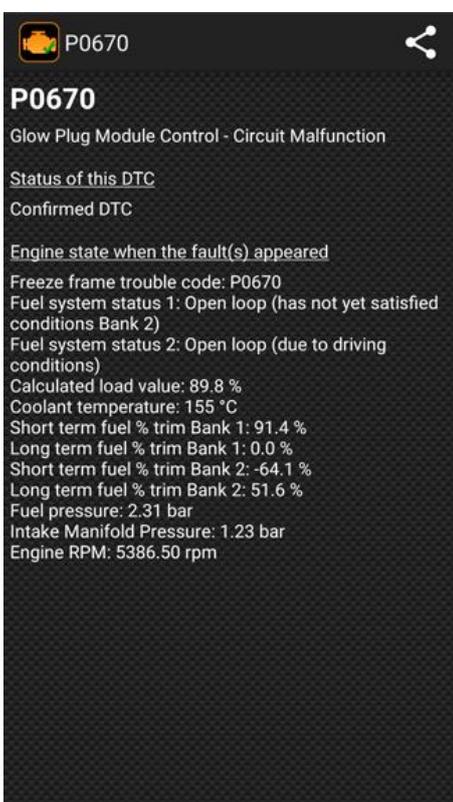
Notice: The application has a database which contains many DTC descriptions (more than 20000) but this list is not exhaustive. If the description is not present inside the application database, the following text will be displayed "Description not available". In this case make a research on the internet to find the description associated to the PCode displayed.

For each troubles codes read by the application, details can be available, tap on the DTC to display the associated screen

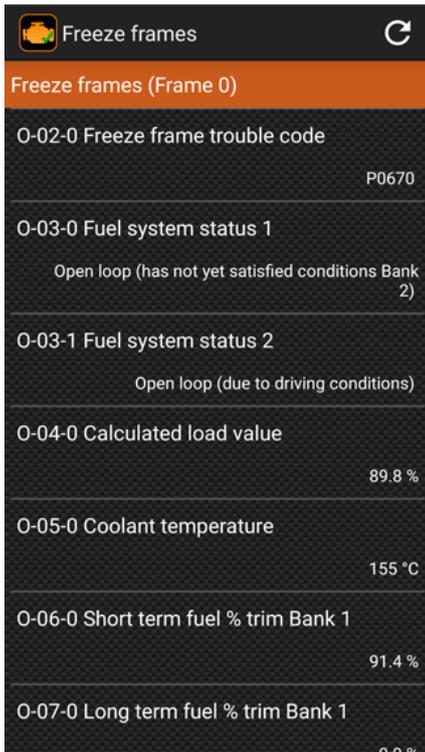
On the left picture, we can see details for DTC P0670. Engine state when the fault has appeared is the same data that can be found with Freeze frame (see next chapter).

You can also share or save this data with the help of the button on the top right of screen.

Notice: Following vehicle, information can be more or less precise. Engine State when the fault has appeared is only available with Basic Edition.



Diagnostic – Freeze frames:

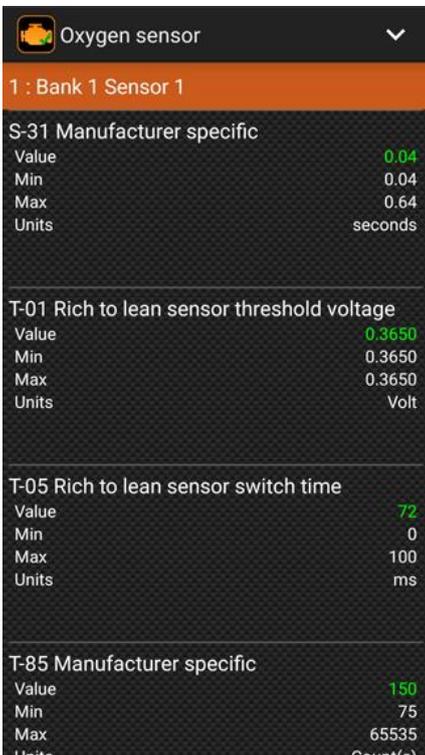


Freeze frames are a « picture » of the engine state when the default has been detected. It can be very useful.

By default EOBD-Facile will display information linked to the first frame (frame 0). If currently you have 3 defaults recorded inside the ECU, scan frame 0; 1 and 2 to see associated freeze datas for each defaults.

Select the frame to display with the « Frame » button at the top right of the screen.

Diagnostic –Oxygen sensor:



On gasoline vehicle Oxygen sensors are in charge of calculating the fuel trim adjustment (air-fuel ration). They are very important for a correct engine performance.

Those are monitored by the electronic unit and it is possible to know if they work in the range defined by the manufacturer.

Select the sensor you wish to display with the top right button called “Sensor”. Most of the recent vehicles have at least 2 sensors fitted on the exhaust pipe.

Diagnostic - Monitoring:

Systems	
0-01 Exhaust Gas Sensor Monitor Bank 1 - Sensor 1	
01 - Rich to lean sensor threshold voltage	
Value	0.3650
Min	0.3650
Max	0.3650
Units	Volt
05 - Rich to lean sensor switch time	
Value	72
Min	0
Max	100
Units	ms
85 - Manufacturer specific	
Value	150
Min	75
Max	65535
Units	Count(s)
0-02 Exhaust Gas Sensor Monitor Bank 1 - Sensor 2	
01 - Rich to lean sensor threshold voltage	

This screen will display all systems monitored by the electronic unit.

Following the vehicle's configuration you can access to data concerning: Fuel, EGR, PM, Air, EVAP...

You can check that each system works inside the range defined by the manufacturer. If the value is inside the tolerance it will be displayed in green. Values displayed in red are out of range.

Diagnostic - Erase trouble codes:



Erase should be done once the repair has been made. A warning message will be displayed asking to confirm that operation. This operation will erase all data linked to diagnostic.

This operation is not to be undertaken lightly; once the deletion has been done, all diagnostic data will have been deleted and it will not be possible to view them anymore. The vehicle will have to have completed new driving cycles before you can rebuild the information. So do the deletion only if you have actually made repairs.

Important notice: Erasure of data trouble code must be done with the engine stopped. If the engine is running the application will display an error message and the erasure will fail.

Consistency

This function allows checking if the vehicle sensor's values are inside a "plausible" range. This function should be used with engine started. Software will scan all the sensors to report sensors which can be damaged For example: a temperature sensor reporting -40°C is due to a short circuit to the ground of the sensor itself or a default of harness.

Diagnosis report

This function allows make a complete diagnosis of the vehicle. The report can be saved and/or print to see it later.

To generate a report, please follow the below steps:

1. Fill the vehicle informations
2. Select ECU to include to the report
3. Select diagnostic's data to include to the report

Account of the diagnostic

Vehicle designation

Owner:
Make: Renault
Engine: 1.5 dCi (65Hp)
Vehicle Identification Number: VF1SBR7EF32850000

Calculator 1: ECU Engine: 0x7E8

General status

 MIL Status: On 37813 min
3 Trouble Since
Code(s) 30747 km
1 Last Trouble
Code(s)

Trouble Code(s)

1	P0670	Glow Plug Module Control - Circuit Malfunction
2	P0401	Exhaust Gas Recirculation Flow Insufficient Detected
3	P0230	Fuel Pump Primary Circuit - Malfunction

This screen show a report generated with a vehicle which have faults It is possible with the tool bar to perform actions like:

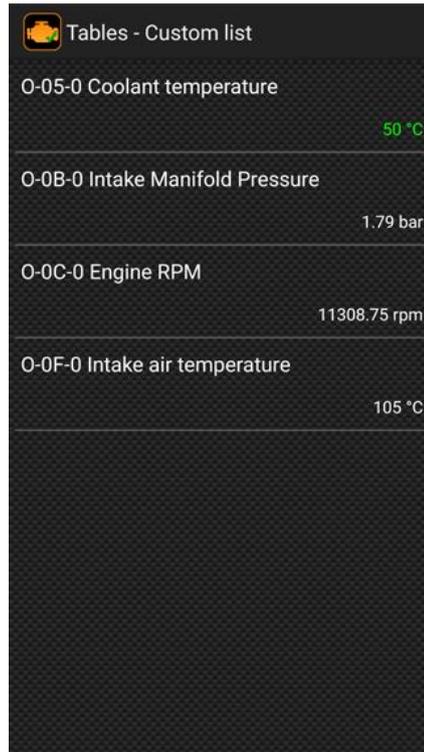
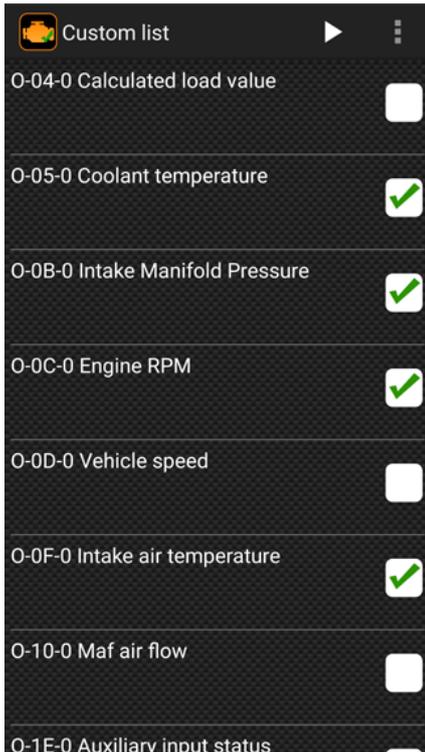
1. Print the report
2. Add a comment
3. Save the report

Reports generated are available inside the History menu.

Notice: Printing report need to have a printer compatible and Android version 4.4 or above

Tip: If your printer is not available during the diagnosis, it is possible to save the report to print it later

Measures with table:



It's possible to read vehicle sensor in real time.

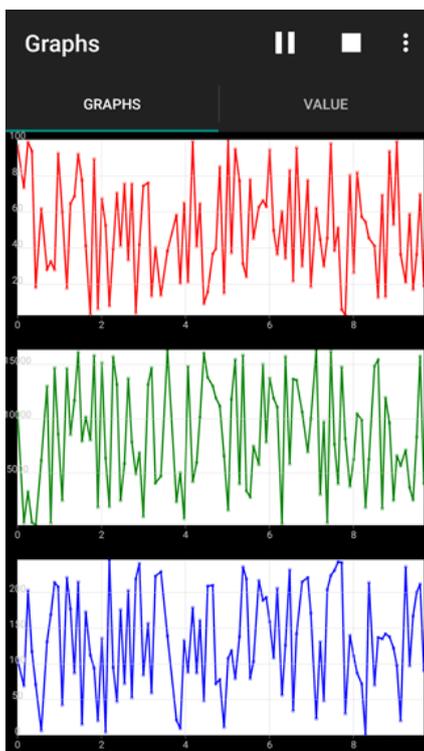
Following the vehicle configuration (Fuel type, model year), the below list of sensor will be more or less important.

Select which one you want to display and start reading by taping on the "play" button on the top right of the screen.

Notice: Reading is done sequentially (one by one), so more you select sensor less the refresh period will be.

The second screen show the 4 previously selected values displayed. Data will be refresh continuously until you leave the screen by taping on the back button.

Measures with graphic mode:



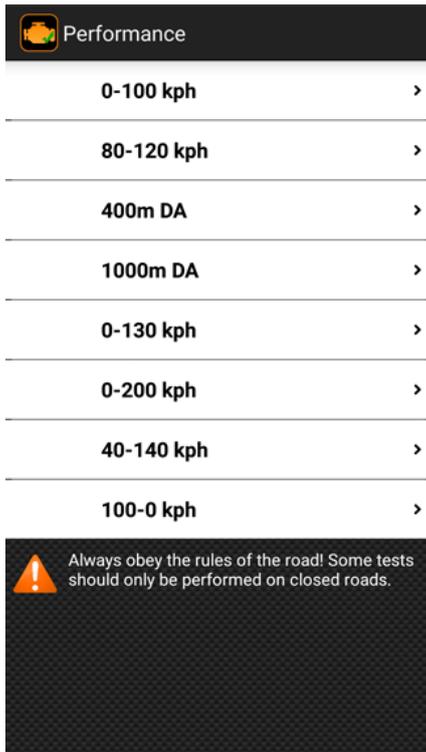
It's also possible to see real time data with a graph.

First select sensor you wish to display on the chart. 3 ways can be simultaneity displayed.

At the same time our application will record data's value inside a csv file. This file can be reviewed later with a spreadsheet or with our software EOBD-Facile for PC Windows.

When you will stop the record a popup will be showed to ask you if you want to save this record into a file. Cancel or give a name to the file. This function can be disabled into the application's settings.

Performance measurement:



Performance measurement will allow you to check your vehicle acceleration time like you can find in automotive magazine.

Here you can see the 4 measurements available for metric units. If you change the application settings, measure test will be

- 0-60 mph
- 30-70 mph
- 1/8 mile
- 1/4 mile

The second screenshot shows a measure done with 0-100 km/h

During the test, chronometer will start and stop by itself automatically. Once you have finished, a summary table will

be displayed to see intermediate time at different moment of the test.

You can record this result by taping on the folder icon at the top right of the screen. A file will be generated with a csv format (like once graphical function). This file can be upload or share (See next chapter).

Notice: The measure resolution will depend of your car, it will start at about 0.10s to 0.25s (From 4 to 10 measures per second).

Share records done:



From application, you can use the "Records" screen to manage your records done with the application.

With the action button at the top right of the screen, you will be able

1. Review your records
2. Share your records
3. Rename them
4. Erase records

Select Electronic Unit:



Depending on the vehicle you have you can make a diagnostic on several ECUs. You can change the current ECUs you are working on with this icon. Most of the time 2 ECUs are available: PCM (Powertrain Control Module) and TCM (Transmission Control Module).

Vehicle's information:

Identification	
Protocol	ISO 15765-4 (11 bit ID, 500 Kbaud)
Design OBD requirements	OBD and OBD II
Vehicle Identification Number	VF1SBR7EF32850000
Calibration Identifications	JMB*36761500 JMB*47872611
Calibration Verification Numbers	1791BC82 16E062BE
ECU name	

To obtain information about the vehicle and the ECU like protocol, OBD standard, VIN (Vehicle Identification Number).

IPT (In Use Performance Tracking):

IPT Counter	
In-use Performance Tracking	
OBD Monitoring Conditions Encountered Counts	1024 Count(s)
Ignition Cycle Counter	3337 Count(s)
Catalyst Monitor Completion Counts Bank 1	824 Count(s)
Catalyst Monitor Conditions Encountered Counts Bank 1	945 Count(s)
Catalyst Monitor Completion Counts Bank 2	711 Count(s)
Catalyst Monitor Conditions Encountered Counts Bank 2	

Display all the results of monitoring done during driving cycles.

Basic Edition: (previously called Premium access)

Free version of the app allows you to test the compatibility of your vehicle and to read your data trouble codes stored inside Electronic units.

Important Notice: Connection, read and display DTC descriptions work the same way for the Free and the Basic version. If you do not reach to connect your vehicle or you are not able to read DTC, buy the Basic Edition will not solve your problem.

You can purchase the Basic Edition only from Google Play. Make sure that you have good access to internet before making your purchase.

Reminder: when connected to the ELM327 by WiFi you cannot access the internet by WiFi (GSM only).

The purchase of the Basic Edition provides access to all the functions listed above without any limitation of time or number of uses. Updates are free and will be made to follow the development of diagnostic standards on newer vehicles

	Free	Basic Edition	Plus Edition
Connect to vehicle with ELM327	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Check Electronic Unit (ECM, TCM, LPG)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Read status of diagnostic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Read DTC (Data Trouble Codes)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Display DTC description	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Read Freeze Frames		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Diagnose oxygen sensors		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Diagnose systems (EGR, PM, EVAP...)		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Clear DTC		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Consistency			<input checked="" type="checkbox"/>
Generate diagnostic report			<input checked="" type="checkbox"/>
Save/Load diagnostic from history			<input checked="" type="checkbox"/>
Display sensor values (Table)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Display sensor values (Graphic)		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Record sensors values (csv files)		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Review sensors values inside application			<input checked="" type="checkbox"/>
Performance measurement		<input checked="" type="checkbox"/> (4 tests)	<input checked="" type="checkbox"/> (8 tests)
Read vehicle identification number		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Read IPT		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Terminal		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

If you have multiple devices running on Android, you can use your Basic Edition on all your devices. After buying for the first time, use the "Restore" button on the purchasing screen to activate your device. This process is also valid if you change your device.

Terminal:

This function allows to send custom commands to the interface for the ELM module (AT command) or to make specific OBD requests to the vehicle.

Example: Read the ELM version

- Enter ATI and tap on Send button
- The ELM will display its name "ELM327 v1.4"

For more details on the available commands, see the technical data sheet for the ELM327 interface.

Important notice: Be careful, using this function can create unexpected behavior of the application, please re-connect the vehicle after using it to recover correct synchronization of the application and the ELM327.