



USER GUIDE

inCarDoc

ANDROID

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Requirements

Car

American cars since 1996,
European since 2001,
diesel - 2004.



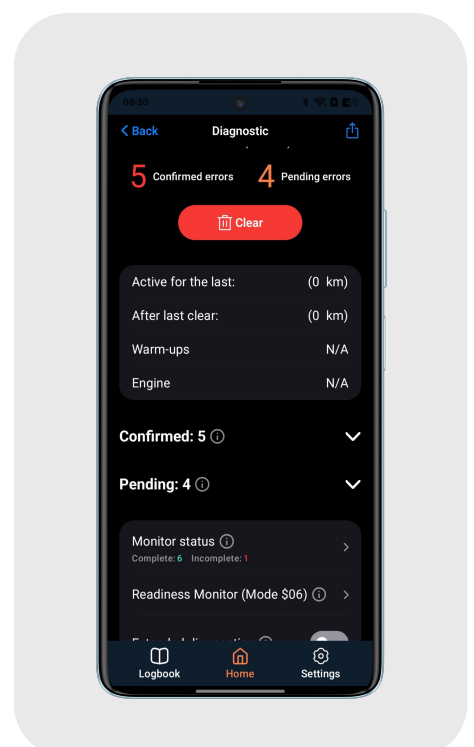
OBD scan tool hardware

Android application
requires OBD-II Bluetooth
adaptor based on ELM 327
or compatible one.

Mobile device

inCarDoc and inCarDoc Pro
is available for all Android
devices (Android 6 or newer).

We recommend adding your vehicle's
specifications to the app to ensure
accurate diagnostic data and records.



inCarDoc Solutions

Use Smartphone for Quick View of the Car and Engine Main Parameters:

- Read real-time parameters: speed, rotation, timings, economy
- Read diagnostic trouble codes
- Clean trouble codes (reset the turn off Check Engine, MIL)
- Analyze fuel consumption and efficiency

Supported parameters	inCarDoc	inCarDoc PRO
Read and interpret trouble codes (DTC memory)	10/month	✓
Clear error codes including Check Engine Light (MIL) and others	10/month	✓
Read parameters in real-time (if supported by the car):	✓	✓
Engine RPM	✓	✓
Motor load	✓	✓
Coolant temperature	✓	✓
Fuel System Status	✓	✓
Speed of Vehicle	✓	✓
Absolute air pressure	✓	✓
Ignition timing	✓	✓
Inlet air temperature	✓	✓
Mass air flow	✓	✓
Throttle position	✓	✓
Lambda Sensor (correction of the motor)	✓	✓
Fuel pressure	✓	✓
And another parameters - depending on the car	✓	✓
Chart drawing for real-time data	✓	✓
Reading VIN chassis number	✓	✓
Real time parameters recording	-	✓
Read, display, record multiple parameters simultaneously	-	✓
Recording parameters in background mode	-	✓
View and sending recorded parameters traces	-	✓
GPS support	-	✓

OBD II Bluetooth Hardware



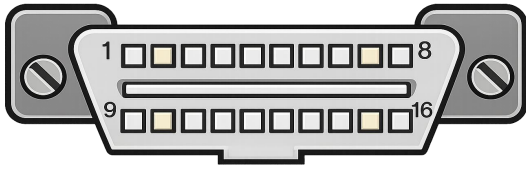
Please, note that Android supports all ELM327 based Bluetooth hardware interfaces including but not limited to:

- OBDII
- OBD pros
- CHX
- CBT
- Vgate
- OBD2ECU
- ScanTool.net OBD Scan (including OBDLink scanner and other adapters STN11XX)
- PLX Devices Kiwi Bluetooth
- Diamex DX70 & DXM
- Any other ELM327

You can buy a branded **inCarDoc Bluetooth adapter**. Or you can search for an ELM327 Bluetooth adapter on the Internet and choose the option you like.

NOTE! Do not use clones of ELM327 that are missing the original chipset. You could notice potentially problematic adapters by their very low price. Check or request the MAC address of the adapter to prevent yourself from getting a "bad" adapter.

Starting Using Application



Before using the application, make sure that your car supports the OBD-II standard.

To determine whether your car supports the OBD-II standard, examine the 16-pin DLC (Diagnostic Link Connector), which has a trapezoidal shape.

All OBD-II vehicles have a connector located inside the passenger compartment and easily accessible from the driver's seat. Check under the dashboard, behind the ashtray, or near it. All vehicles manufactured since January 1, 1996, are equipped with OBD-II systems.

*Some vehicles have an OBD-II system but do not support the standard OBD-II protocol, such as Opel Vectra models from 1996–1997. In such cases, it is necessary to use a scanner designed to work with the factory protocols of that specific vehicle brand. For example, this applies to Opel Vectra B 1996–1997 models for the European market.

You will need to determine which specific OBD-II protocol is used. It is also useful to inspect the identification labels on the vehicle - they may contain markings such as “OBD-II compliant” (supports OBD-II) or “OBD-II certified”.



OBD II
CERTIFIED

Another way to determine whether your vehicle is supported is to read the technical documentation for your vehicle (not just general information about the car brand or model). You can also search the Internet using keywords that include your car brand and model.

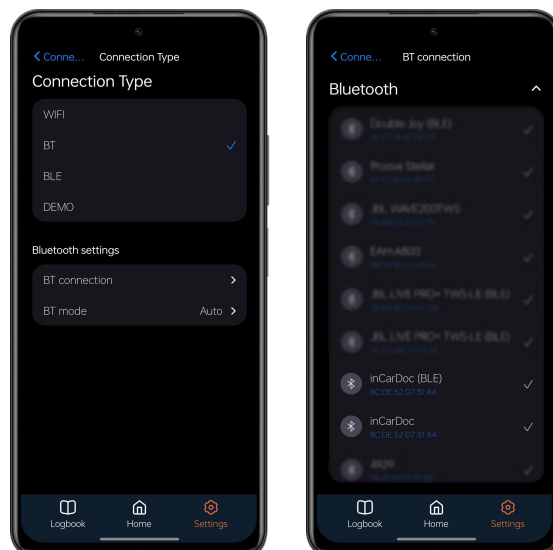
inCarDoc

Launching and Configuration

- 1 Plug the ELM327 Bluetooth adapter into the diagnostic port (DLC — Diagnostic Link Connector). It should be within 16 inches of the steering wheel.



- 2 Go to the Bluetooth environment at you Android mobile and find the adapter.
- 3 Start the engine
- 4 **Go to Settings > Connection > Connection Type** and 'Bluetooth Connection.' Select the adapter you are using. Your phone will prompt you to pair the devices.

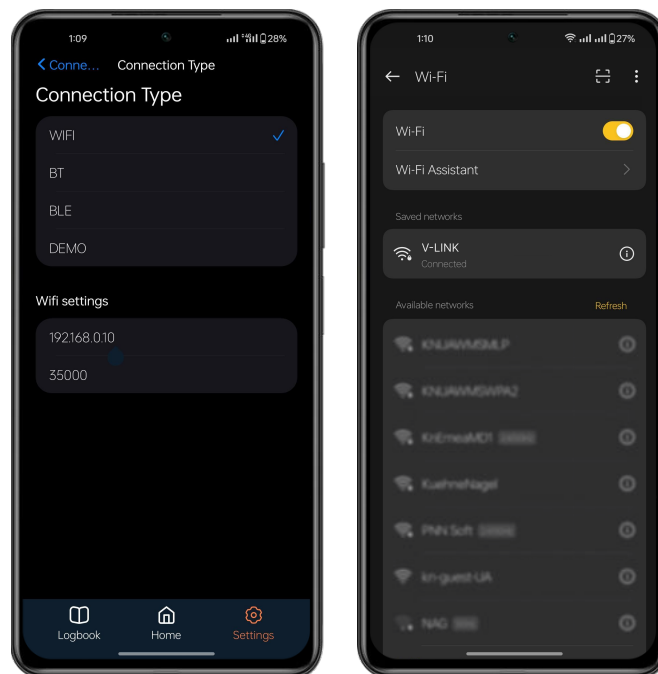


- 5 Pair two devices. The secret code of pairing is 1234 or 0000

inCarDoc

Launching and Configuration

- 1 Plug in the Wi-Fi ELM327 adapter into the DLC port.
- 2 Start the car, enable Wi-Fi on the phone, and open the app.
- 3 Go to **Settings > Connection > Connection Type** and select Wi-Fi in the list.
- 4 Check below in the list for Wi-Fi configuration info:
IP Address: 192.168.0.10
Port: 35000
- 5 Go to the phone Wi-Fi settings, and make sure that your phone is connected to the adapter. Check the connection info; it should match to the app settings.



If you still have any issues with connection, follow the FAQ, or contact us at support@incardoc.com

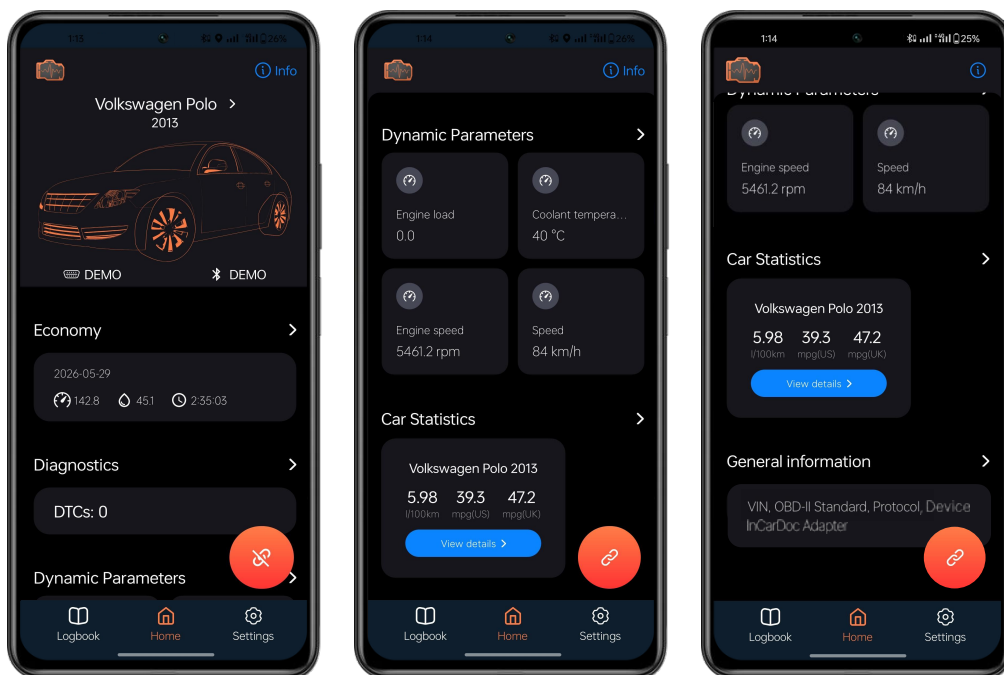
Watch the video on YouTube

<https://www.youtube.com/shorts/XJEw9lm7h3w>

inCarDoc Home Screen and Connection Settings

The 'Home' screen displays all the app's main features. To use them fully, you need to connect to the adapter.

- Your Car
- Economy
- Diagnostics
- Dynamic Parameters
- Car Statistics. To see your car fuel consumption statistics (as shown in screen) you need to add your car characteristics.
- General Car Information

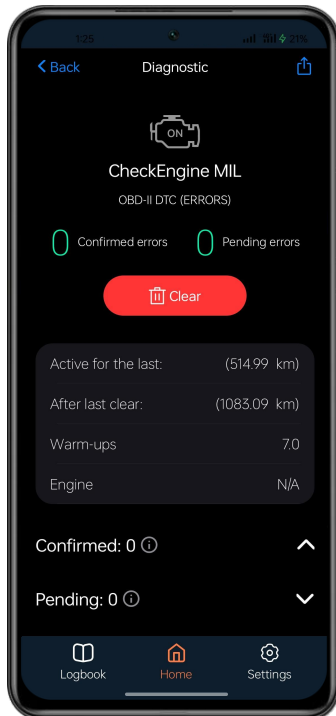


Connection Settings

To configure the connection type, go to Settings and select **Connection > Connection Type**.

The following options are available in the menu: **Wi-Fi, Bluetooth, BLE, and DEMO**. You can apply additional settings to these connection types. For your convenience, you can enable automatic connection.

Diagnostic Trouble Codes



The Diagnostic Trouble Codes option allows you to view and clear diagnostic trouble codes (DTCs).

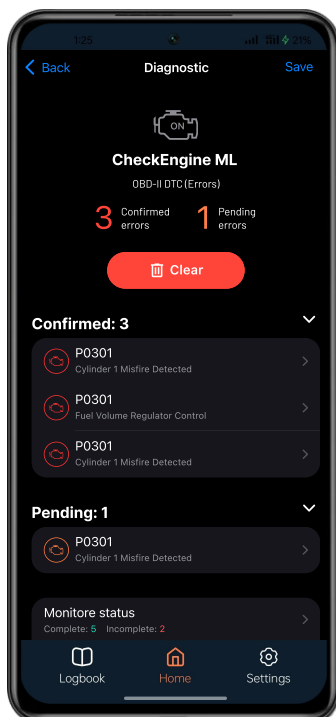
You can go to the diagnostics screen and view any DTC errors that have been detected.

The user can view

both **Confirmed** and **Pending errors**. You can clear them by clicking the corresponding button at the top.

In addition, this screen displays the monitor status, Readiness Monitor (Mode 06), and Extended Diagnostics.

- Clicking **Clear** button, you are resetting current data of the diagnostic trouble codes.
- Clicking button **Save**, you can save error codes for further reviewing at the **OBD Records**.



Click on the error to view its description. Here you can see **Freeze Frame** data — a snapshot of the parameter at the time of the error.

Once the general diagnostics are complete, you can scroll down to view the extended diagnostics. This feature allows you to identify additional errors. inCarDoc partially supports manufacturer-specific error codes. This diagnostic process takes more than 5 minutes, so please keep that in mind.

Note that extended diagnostics is extremely sensitive to the quality of adapters and correct car manufacturer settings. Incorrect data may lead to instability. Turn off the toggle if you are not sure in this.

inCarDoc Settings

Here you can view all the settings available in inCarDoc.

Connection Guide - Quick step-by-step manual for app connection.

Connection - Advanced connection settings.

Protocol - Here you can select the OBD2 diagnostic protocol for your vehicle. In addition to the standard OBD II protocol, the app supports several OEM protocols. You can also select ECU protocols. Note! We recommend setting 'Auto search.'

- **Unsleep Mode** - You can enable or disable sleeping mode at the dynamic data page
- **Store OBD protocol** - You can enable or disable this option. It allows saving a specific log to a specific car.

Car Parameters - Please enter the vehicle and its specifications for a more accurate diagnosis.

Localizations - In this section, you can choose the app language (13 languages) and measurement units (metric and imperial).

You can also choose to ignore the localization. The app's language will remain the one you selected, but the names of the metrics will be in English only.

GPS parameters - you can enable or disable GPS coordinates recording.

Logging - Records of the app performance during diagnostic, connection, and data recording. You can send app performance records to developers. It helps us to improve the app and help you to resolve some issues. You can enable 'Debug Logging,' 'Send anonymous statistics,' and 'Clear logs.'

Guide - option that includes 'Initial Guide' and 'Connection Guide.'

Plugins - customize your app experience. Users can enable economizer, default widgets, and console. Also, options such as cleaning the economizer database and editing expense types are available.

Console allows the user to enter a specific command for which they want a response.

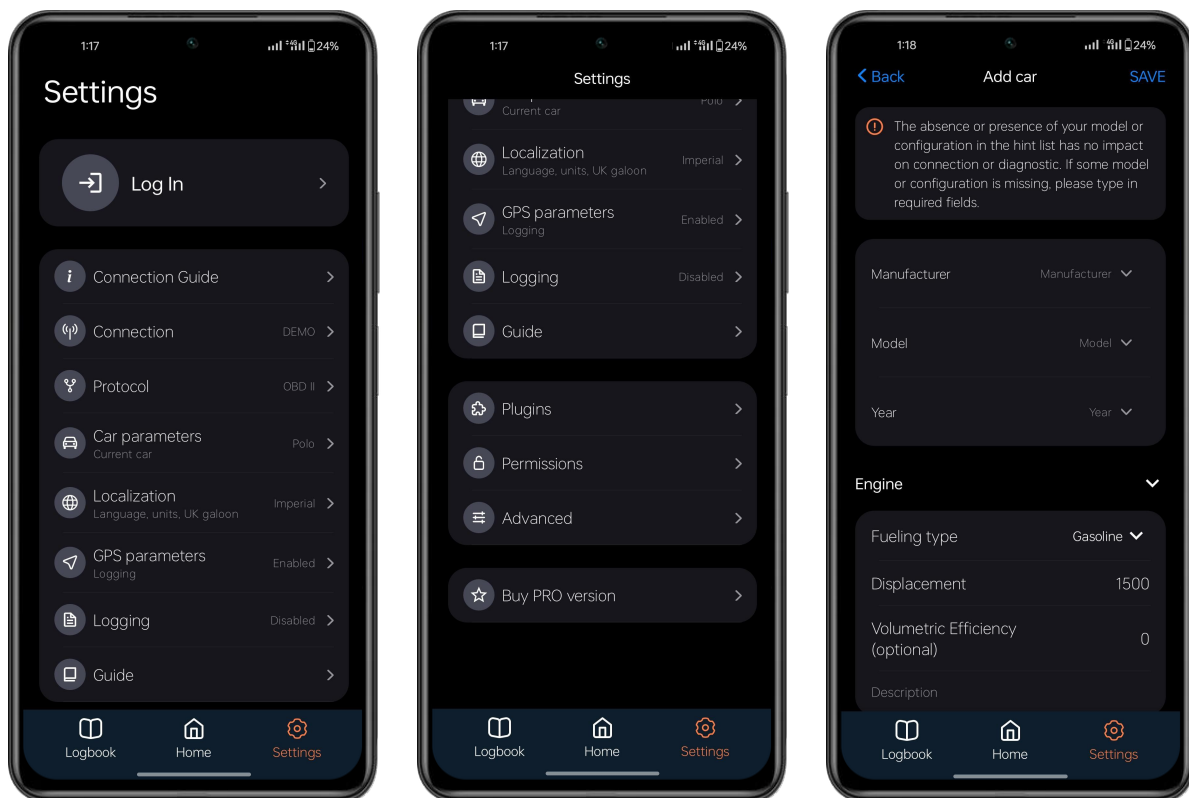
inCarDoc Settings

Permissions - inCarDoc asks three permissions: use of location, nearby device detection, and post notifications.

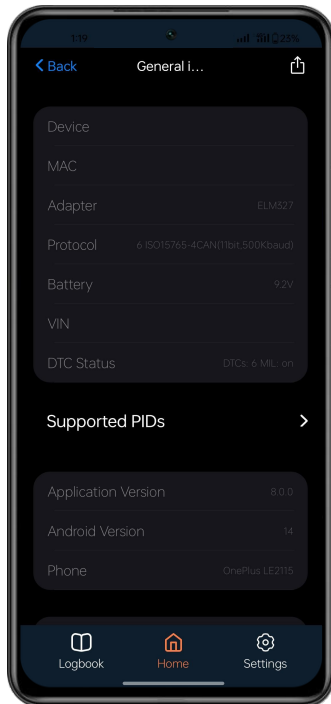
Advanced - users can disable dark mode, failure reconnect time, choose command delay, and enable additional tips and tutorials.

Ignoring commands—you can select specific commands in advance that the application will not send to the adapter.

Buy PRO Version - users will be redirected to the Google Play Market to buy inCarDoc Pro.



General information

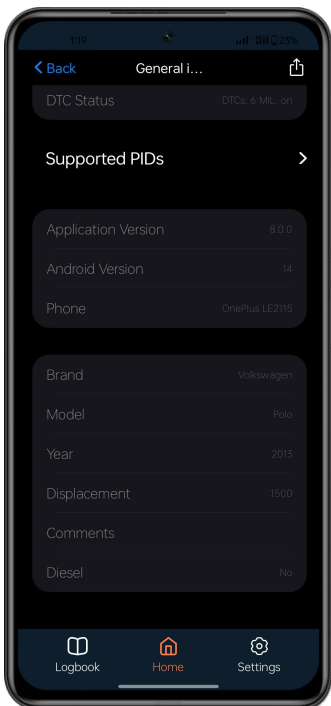


The General Information option allows you to review general information about the device:

- Device – adapter name
- Adapter – adapter type and version
- Protocol – ECU of the car
- Volumetric efficiency
- DTC status
- Supported PIDs
- App version
- Android version
- Phone model

Here you can also review the car parameters that you've filled in the Settings menu:

- Brand
- Model
- Year
- Displacement
- Comments
- Diesel

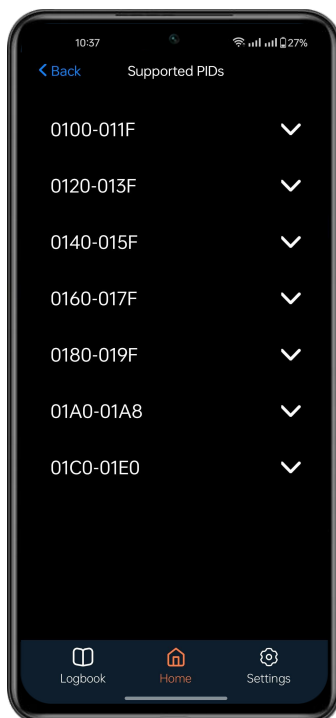
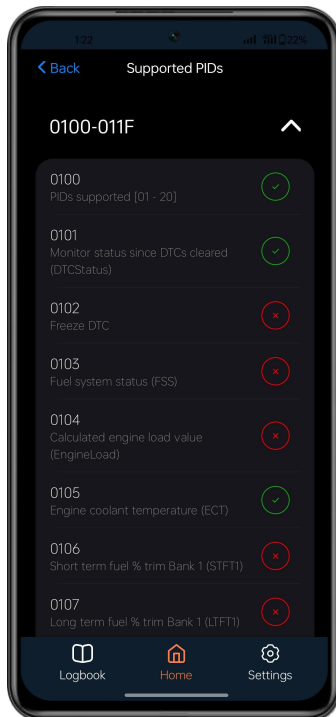


You can also send this data to help us improve the application by clicking Send OBD II on e-mail.

You can also **Save** this information and **Share** it with your contacts or **Send** it to customer support.

Keep in mind that not every vehicle control unit supports all of the functions and not every OBD-II diagnostic scanner can use all of these modes:

General information



Supported PIDs

- PID 03 Fuel system status. At the value "Closed Loop" the system works in the feedback mode; at that time the data from Oxygen Sensor are used for correction of the fuel supply. At the value "Open Loop" the data from Oxygen Sensor are NOT used for correction of the fuel supply;
- PID 04 Calculated Load;
- PID 05 Coolant temperature;
- PID 06/08 Short Term Fuel Trim Bank 1/2;
- PID 07/09 Long Term Fuel Trim Bank 1/2;
- PID 0A Fuel pressure;
- PID 0B Manifold pressure;
- PID 0C Engine speed - RPM;
- PID 0D Vehicle speed;
- PID 0E Ignition Timing Advance;
- PID 0F Intake Air Temperature;
- PID 10 Air Flow;
- PID 11 Throttle position;
- PID 12 Secondary Air Status;
- PID 12 Location of O2 sensors;
- PID 13-1B O2 Sensor 1/2/3/4 Bank 1/2 Volts.

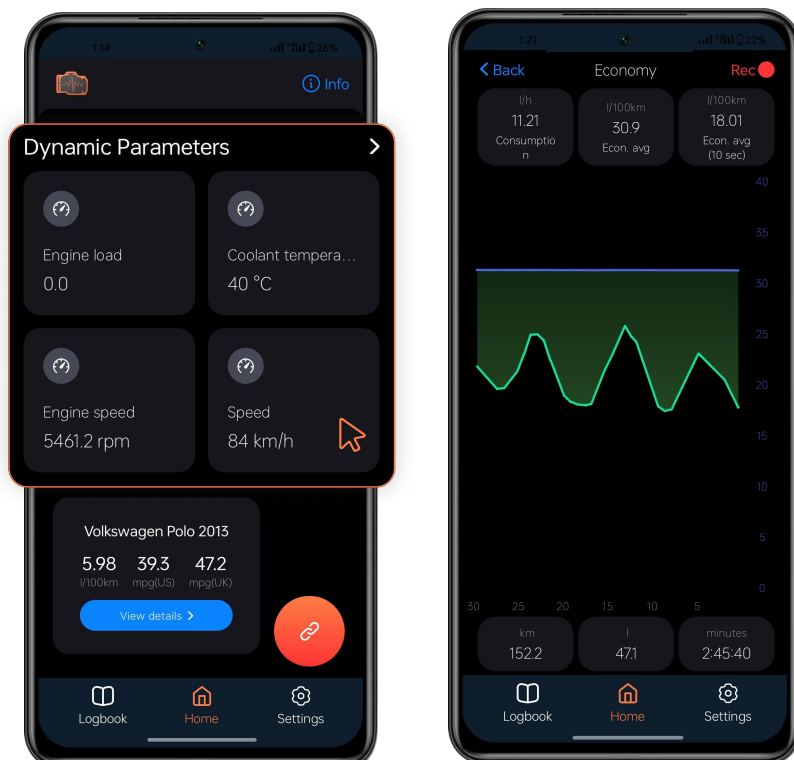
Dynamic Parameters

The Dynamic Parameters option displays the list of dynamic data read from the car engine.

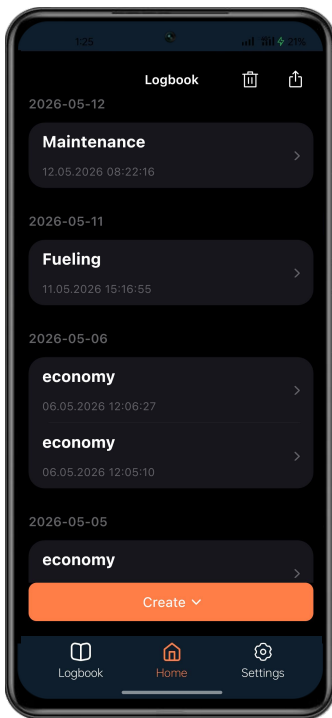
While clicking the command name one will see the detailed information with its real time value and a visual graph (where supported).

- Getting saved status of the current parameters of the control system at the time of the fault codes occurrence (Mode 2 Freeze Frame).
- Mode 3 Read Diagnostic Trouble Codes (DTCs).
- Mode 4 Reset DTC's and Freeze Frame data – clear error codes, status of the current parameters, Oxygen sensor tests results, test monitors data.
- Mode 9 Request vehicle information - VIN-code and calibration data.
- Fuel Economy parameters

Please note that for correct calculation you may need to enter proper Engine displacement (in cubic cm) and volumetric efficiency (in %, the default is 80).



Logbook



While inCarDoc PRO allows users to store all in Free version and:

- Fuel Economy full access
- Dynamic parameters
- Combo commands

The OBD records option of the inCarDoc basic version

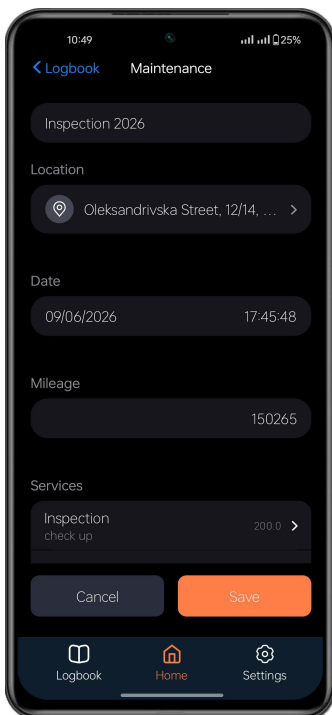
Allows to review stored records of the **General information** and **Diagnostic trouble codes** options.

To record OBD information

You need to call Android standard menu, you'll see **Send**, **Save** and **Clear**.

The inCarDoc Free version allows to store information about:

- Fueling
- Maintenance
- DTC history
- Fuel Economy



inCarDoc PRO

If you are using the standard version of inCarDoc and would like to take advantage of the additional features available in the enhanced version, you can install **inCarDoc PRO** on your smartphone.

To upgrade to the PRO version, click the '**Buy inCarDoc Pro**' button on the home screen.

After pressing this button, you will be prompted to download the paid version.

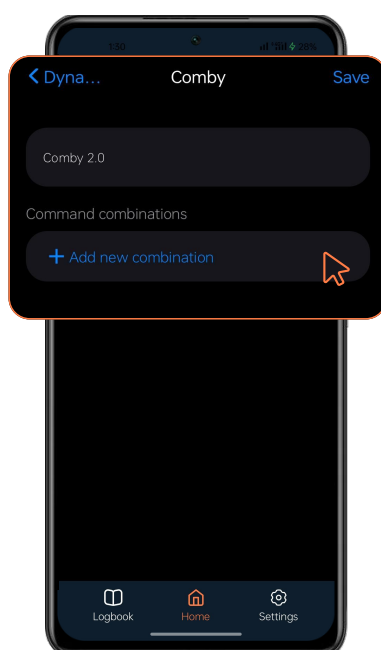
You can also use the Google Play button below.



inCarDoc PRO includes additional features described in the comparison table on the Introduction page.

inCarDoc Pro also provides access to **Comby Commands**. From the home screen, go to Dynamic Parameters > Comby. Name this widget and add up to 6 parameters you want to monitor.

inCarDoc Pro users also have extended access to recorded messages in the Logbook.



inCarDoc PRO

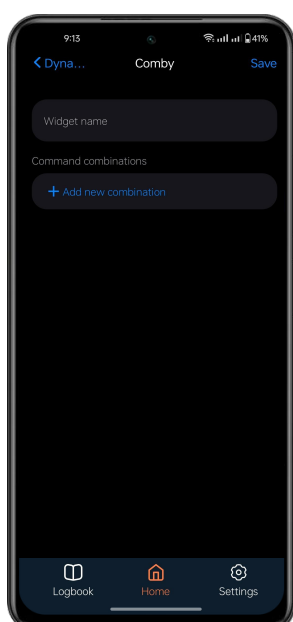
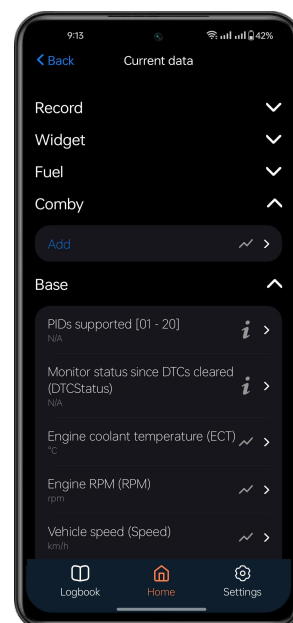
The Command Combinations

The "Command Combinations" option allows you to create custom combinations of basic commands for further analysis. You can compare data changes from different commands using visual graphs, lists, and other display formats.

* For example, if you want to analyze the relationship between vehicle speed and engine RPM, you can create a command combination for quick and convenient monitoring of their dynamics.

To create a sequence of commands, tap "**Command Combinations**" on the main screen. A menu with existing combinations and an "**Add**" button will open.

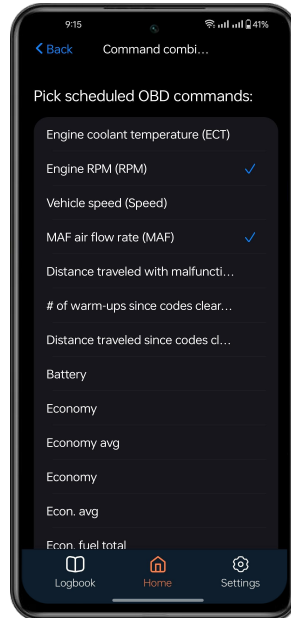
- 1 Tap the Add button to open the page for creating a new combination.



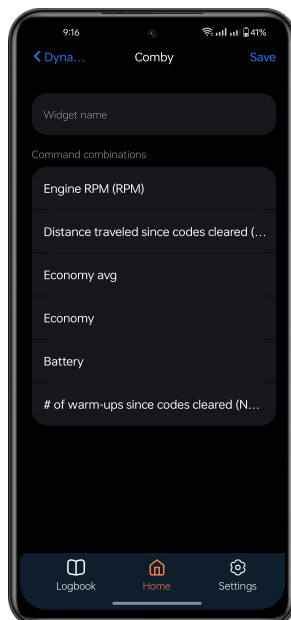
- 2 Enter the name of the combination.
- 3 Tap Add to create a new combination.

inCarDoc PRO

- 4 Select the required commands from the list and tap Save.



- 5 In the previous menu tap Save button.



This screen also displays all command combinations you have created.

*For comparison purposes, you can select multiple commands.

However, keep in mind that the more commands selected, the longer and more complex the request cycle and graph rendering process will be. We recommend selecting no more than three commands at a time.

inCarDoc PRO

The Record Comby Commands

To review the saved records of OBD commands on Logbook screen, you need first to record the command or a combination of commands.

To start, follow Home screen > Dynamic Parameters > Comby > Add > Add New Combinations.

Select from 1 to 6 commands and click Back. Enter the name of the widget and click Save. Press on an already created widget and click the Record icon in the upper right corner. To stop recording, click the Record icon again.

*This option is available only in **inCarDoc PRO**.

The Record button **Rec**  can also record data in the background mode.

At the recording mode, at the standard Android control panel one can see the icon, which can be used for quick call of the inCarDoc PRO app.

*While record mode activated the green line is on at the icon.

Users can toggle the selected options at the top and choose the data display type (Chart or Widget).



inCarDoc PRO

The OBD Records

The **Logbook** options allows to review the stored data of the commands and command combinations changes.

From the Home screen of the application, go to the Logbook option.

You will see a list of commands and combinations of commands, with the details of each record (date, time).

By clicking on the record, you'll see the page with the details of the recording, where you will see the tabs:

- **Information** – GPS data, logging details, etc.
- **Graph** – shows the changes of the parameters in the form of a graph, where each command has different colors.
- **Map** – displays traffic route on the map, data overlay on the map.

Long click on item, calls out popup menu allowing you to send data to e-mail and to InCarDoc server or delete parameter.



Questions

1 Does my car support OBD-II standard?

To learn whether your car supports the OBD-II standard, see the following conditions:

1. OBD-II standard is supported by the vehicles:

- U.S. since 1996
- European since 2003 (diesel since 2004)
- Japanese since 2005

Unfortunately, other cars do not comply with the OBD-II standard. But you may see some hints that may help to identify your car.

2. DLC connector (Diagnostic Link Connector) – 16-pin-out DLC of a trapezoidal shape. Some cars have a DLC connector, but they do not support the OBD-II standard. The DLC connector may be located in one of the 8 places and can be open or closed by some cover with a sign "OBD-II", "Diagnose" etc.

3. Technical documentation for your car. OBD-II compliance may be mentioned in the technical documentation of your vehicle (but not in the general direction to the car brand/model).

4. You can also search all the identification plates on the car – there may be signs "OBD-II compliant" or "OBD-II certified".

5. Another way is to ask at the service center or at some online automobile community.

See page 5, Requirements.

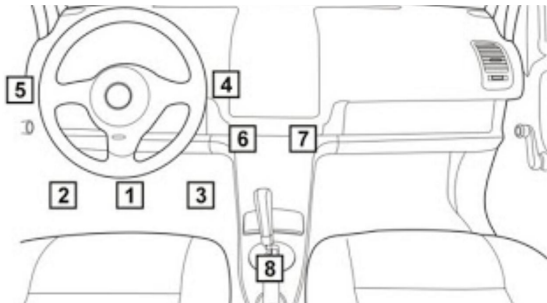
2 If I cannot find OBD2 port?

The main function of the diagnostic socket (in OBD-II it is called a Diagnostic Link Connector, DLC) is to provide the connection of the diagnostic scanner with control units that are compatible with OBD-II. The DLC connector must meet the SAE J1962 standards.

According to these standards, the DLC connector position is in the center of the car.

Questions

It should be within 16 inches of the steering wheel. The manufacturer can locate the DTI in one of the eight locations defined by the EPA. Each pin of the connector has a different purpose.



See page 7, Starting using inCarDoc.

3 What is DTC?

OBD-II supports the SAE J2012 standard, which comprises the corresponding trouble codes - Diagnostic Trouble Codes (DTCs). The OBD-II codes have a united format consisting of a Latin letter and 4 digits (sometimes letters instead). These codes are used by some manufacturers to identify vehicle problems.

The codes are divided into two groups—generic and extended codes. Generic ones are strictly standardized, and their decoding is always the same for all the OBD-II cars, but vehicle manufacturers also may use manufacturer-specific DTC codes that are different from the generic codes—extended codes. Foreign vehicles may also use DTC codes different from the generic DTC codes. It's important to remember that codes depend on the car's construction, model, and manufacturer.

4 What adapters are supported by inCarDoc app?

To start use inCarDoc as diagnostic tool you need to buy an ELM327 adapter. The Android version of the inCarDoc works smoothly with wireless adapters that support Bluetooth and Wi-Fi.

Note that you need to use high-quality adapters based on genuine or fully compatible ELM327 v1.4/v1.5 chips. When choosing an adapter, pay attention to its MAC address.

Questions

You also can check it in General Information.

See page 13.

5 How to connect Bluetooth adapter with my car and inCarDoc?

So for the first connection:

1. Plug the ELM 327 Bluetooth adapter into the car's OBD-II port, go to the Bluetooth environment on your Android mobile, and find the adapter.
2. Pair the two devices.
3. The secret code of pairing is 1234 or 0000.

Go back to the inCarDoc app. Simply to put, you can follow our Connection Guide. Follow **Settings > Connection Guide** and take step by step connection.

Wait for connection to succeed and start diagnostics.

6 How to connect Wi-Fi adapter with my car and inCarDoc app?

1. Plug your OBD Wi-Fi Device (OBD-II Wi-Fi Adapter) to your car's OBD2 diagnostic port. The OBD-II port is usually located within 2 feet (0.61 m) of the steering wheel.
2. Start car's engine.
3. Go to the InCarDoc Application. Choose Settings > Connection > Connection Type and choose Wi-Fi. Configure the following information in Wi-Fi settings:
 - IP Address: 192.168.0.10
 - Port: 35000
4. Click Back to save.
5. Click Connect and see General Info. Start your car and see Dynamic Parameters. Turn on Wi-Fi on your smartphone.

For the first connection you will see Connection Guide. Follow steps and in Wi-Fi list in the app (expand list) you will see available networks. Select those that is adapter you use.

Questions

Note that the next connection will go automatically in one click!

7 I still cannot connect to adapter with inCarDoc app

If everything above is correct but the connection still cannot be established, try the following steps:

1. Make sure that the OBD-II adapter is plugged in correctly, the engine is running.
2. Make sure that the OBD-II adapter appears in the list of paired Bluetooth or Wi-Fi devices on your Android device.
3. Make sure that the correct OBD-II connection and correct adapter is selected: inCarDoc > Settings > Connection > Connection Type
4. Make sure that no other applications are currently using the OBD-II adapter. Open the standard Android settings panel and stop any applications that may still be using the OBD-II adapter.
5. Close all running applications.
6. Turn off the Wi-Fi connection.
7. Turn Bluetooth off and on again.

If the problem still remains, try changing the BT Mode setting:

Menu > Configuration > Connection > BT Mode

If these steps do not help, enable the Debug Logging option:

Settings < Logging

Then try connecting to the adapter again and send the log file from the **Logging** page together with your comments describing the error details.

8 I've established a Bluetooth connection, but the ECU is not detected. What should I do?

Your vehicle may not support the OBD-II standard. In this case, go to:

Questions

Settings > Logging

Then tap **Send** and send us the log file. Based on the logging results, we will help you find a solution.

9 Does inCarDoc work with my phone or tablet?

inCarDoc and inCarDoc PRO are available for Android devices running Android 6 or newer. Your device must also support Bluetooth.

10 Are there any tips for obtaining accurate data?

To ensure accurate data readings, we recommend avoiding the simultaneous use of multiple OBD applications.

Make sure that no other active applications are connected to the OBD adapter.

11 What is the principle behind the application?

The application reads real-time and stored parameters from OBD-II-compliant ECUs (Engine Control Units) in supported vehicles. Reading data from multiple ECUs is also supported.

12 What parameters can I view using inCarDoc?

See the **Overview** page for a comparative list of all supported parameters and features.

13 How do I upgrade to the inCarDoc PRO version?

You can upgrade to **inCarDoc PRO** through Google Play using the link below.

inCarDoc PRO



Questions

14 What do the data "Instant Fuel Economy", "Avg. Fuel Economy", "Instant Fuel Consumption", "Avg. Fuel Consumption" mean?

- **Instant Fuel Economy** – instantaneous flow rate (for "single" current values) measured in km per 1 liter (or miles per gallon).
- **Avg. Fuel Economy** – average consumption for the whole trip (up to current moment) measured in km per 1 liter (or miles per gallon).
- **Instant Fuel Consumption** – instantaneous flow rate (for "single" current values) measured in liters per 100 km.
- **Avg. Fuel Consumption** – the average consumption for the whole trip (up to current moment), measured in liters per 100 km (or gallons per 100 miles).

15 inCarDoc PRO does not display "Instant Fuel Economy", "Avg. Fuel Economy", "Instant Fuel Consumption", or "Avg. Fuel Consumption". Why?

To calculate all types of fuel consumption, the vehicle must support either **MAF** or **MAP** sensors.

Fuel consumption data may appear with a short delay and usually becomes available only after the vehicle starts moving (speed above 5 km/h and distance greater than 50 m).

16 Why does the maximum RPM value during OBD recording not match the maximum value shown on the chart?

(The same issue may occur with RPM data logging.)

Currently, log information on the smartphone is displayed in preview mode. Since zooming is not available, only averaged data points are shown, which means RPM "peaks" may be cut off.

For more detailed analysis, recorded tracks can be uploaded to the server, where additional chart analysis and processing tools are available.

This functionality is currently under testing.

Questions

17 What is "Volumetric Efficiency"? How can I define the Volumetric Efficiency for my engine?

Volumetric Efficiency is used by the application to calculate fuel economy based on the **MAP (Manifold Absolute Pressure)** sensor when direct **MAF (Mass Air Flow)** sensor data is unavailable.

The default value is 80. If the vehicle supports both MAP and MAF sensors, the Volumetric Efficiency parameter can also be viewed in the list of Dynamic Parameters.

Read more about **Volumetric Efficiency**.

18 Can you explain the "Timeout" option in the Settings menu? What units should be used?

The Timeout value defines the interval between data polling requests. This value works as a minimum delay between requests. By default, data is read as soon as it becomes available. If frequent updates are not required, the **Timeout** value can be increased.

It is recommended to use values greater than the response time displayed during data reading.

19 How can I register at InCarDoc service using my mobile device?

To create an account and connect it to the website, you need to go to **Settings > Log in** button. You can register via email and password or continue with Google.

Menu > Configuration > Account

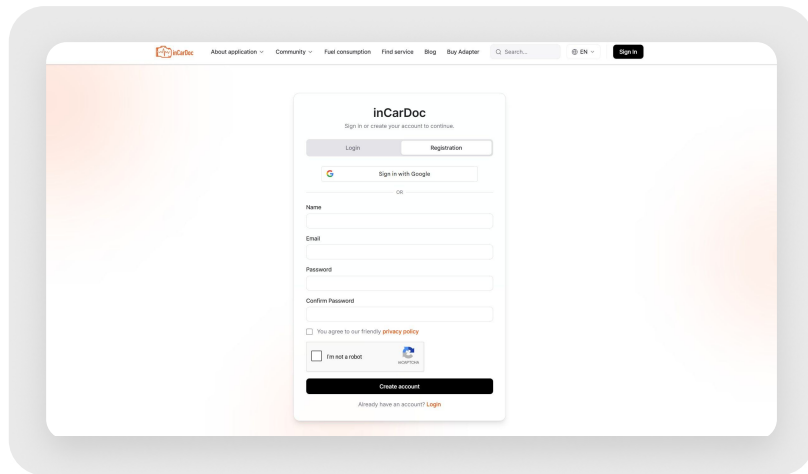
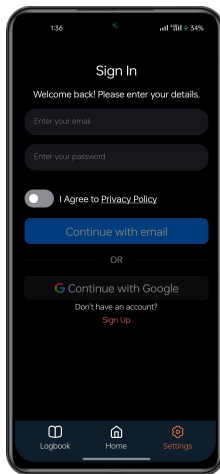
Input **Login** and **Password** for your account and click **Register**.

You need to create an account for sending OBD Records to the server InCarDoc and see detailed information about your car performance in your Personal account.

Also, you can register on the InCarDoc website. Go to incardoc.com and click **Log in** in the corner of the webpage.

Questions

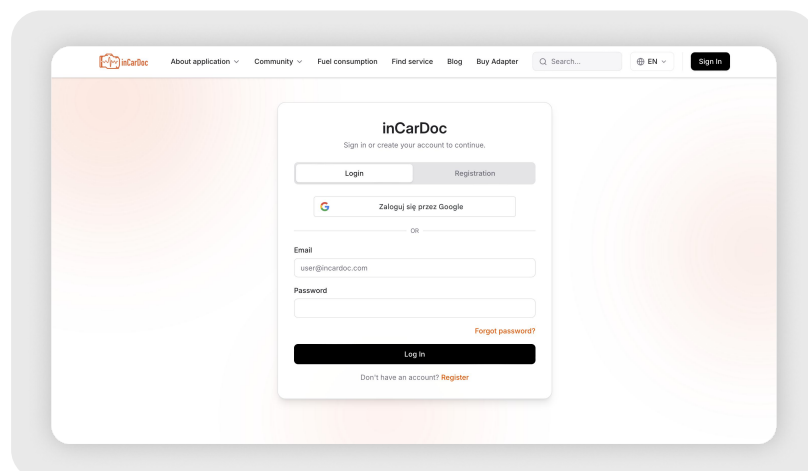
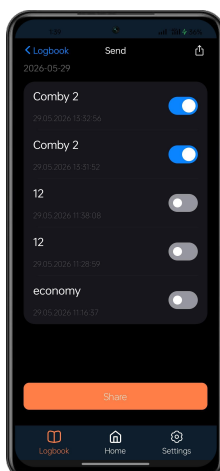
Fill in the required fields and click **Register**.



20 How can I upload data to the server?

For files uploading do the following when your mobile device is connected to the Internet:

- Create an account with the Registration option in the application (Menu > Configuration > Account) or with the website option incardoc.com > Registration.
- Set your Login and Password in Account (Menu > Configuration > Account).
- Upload your traces to the server: open the list of recorded traces at the OBD Records page, long click on an item, and select "Send to service" in the popup menu.
- Visit incardoc.com and log in to the Personal account page to view the traces.



Alarm situations



In case of appearing mistakes during the work with **inCarDoc** which are not described in this user's guide, you should contact our **inCarDoc forum** or e-mail: **support@incardoc.com**.