

# **OBD** Auto Doctor

## User Manual for iOS (iPhone and iPad)

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## 1. Introduction

This document is the user manual for the iOS platform for the OBD Auto Doctor app. The app is optimized for iPhone, but it will also work on iPad. OBD Auto Doctor is an easy-to-use OBD-II car diagnostic software. With the app, you can communicate with your car's Onboard Diagnostic system and turn your mobile into a highly capable automotive scanner.

This user manual assumes that you have the app already installed on your device. If you haven't, you can get it from the Apple App Store.

## 1.1 Platform and Hardware Requirements

The app works on all iOS devices (iPhone & iPad) with iOS version 16.0 or newer. This includes iPhone 8 / 8 Plus, iPhone X, iPhone XR, iPhone XS / XS Max, iPhone 11, iPhone 11 Pro / 11 Pro Max, iPhone SE (gen 2), iPhone 12 / 12 mini, iPhone 12 Pro / 12 Pro Max, iPhone 13 / 13 mini, iPhone 13 Pro / 13 Pro Max, iPhone SE (gen 3), iPhone 14 / 14 Plus, iPhone 14 Pro / 14 Pro Max, iPhone 15 / 15 Plus, iPhone 15 Pro / 15 Pro Max, iPhone 16 / 16 Plus, iPhone 16 Pro / 16 Pro Max, and several iPads. Support for new models will be added after they are released.

## 1.2 Supported Dongles

The app needs a separate dongle to communicate with your car. The app supports both Bluetooth 4.0 (e.g., Bluetooth Smart or Bluetooth BLE) dongles and WiFi dongles.

Supported Bluetooth Low Energy dongles:

- Carista
- CYEL
- FIXD
- Kiwi 3 / 4
- LELink
- MicroTech
- OBDLink CX
- Tonwon
- UniCarScan
- Veepeak
- Vgate
- Viecar
- Yawoa

In addition to the BLE dongles, the app supports OBDLink MX+, vLinker FS, and vLinker MS dongles. Apple has verified that these devices are compliant.

WiFi: Any ELM327 based WiFi OBD dongle

For more info and links, check www.obdautodoctor.com/obd-adapters

### 1.3 Vehicle Requirements

The software works with all cars that have OBD-II. In other words, they are OBD-II compliant. If you have a car that is rather old, or from a country that doesn't require OBD-II, then your car will likely not work with the app. Having similar looking connector doesn't guarantee that the car is OBD2 compliant.

As a general guideline, your passenger car is most likely to be OBDII compliant if it was manufactured or registered after:

- USA: 1996
- EU: 2001 (gasoline) or 2004 (diesel)

For other countries, please see the online document on our website: <u>www.obdautodoctor.com/fag</u>

Note: The app can communicate with OBD2 compliant control units. It cannot access manufacturer-specific control units such as ABS.

## 2. Establish a connection to the car

## 2.1 Attach the dongle to your car's OBD2 port

• Locate the OBD-II diagnostics connector in your car

Search for a 16-pin D-shaped connector that will match the dongle. The connector should be located in or near the dashboard close to the steering wheel. A typical place for the socket is the compartment under the driver's side dashboard.



• Plugin the dongle

After you have located the diagnostic connector, plug in the dongle. Make sure it is tightly attached, but don't use too much force.

• Turn the ignition key to the 'ON' position or start the engine

The dongle should have some LEDs blinking. Note that some older dongle models might not have any lights. If the dongle has an on/off switch, make sure it is turned on.

## 2.2 Verify Connectivity and App Settings

Depending on your dongle connection type, continue to either 2.2.1 Bluetooth Dongle or 2.2.2 WiFi Dongle.

#### 2.2.1 Bluetooth Dongle

• Make sure that Bluetooth is turned on in your device

To verify the status, navigate to your device's **Settings** -> **Bluetooth**.

• Select the correct connection type from the app settings

First, launch the OBD Auto Doctor app. Then, navigate to the *Extras* tab. Select *Connectivity* from the list. Make sure *Bluetooth* is selected as the connection method. Select your dongle as the Device.

WiFi	Bluetooth
iOS supports only Bluetoo Bluetooth Smart OBD2 ac	oth Low Energy / dapters. At the moment,
the app supports only Kiv devices will be supported market.	vi 3 device. More I once they enter the

You can change the device by tapping the Device label or the device name.

Dongles using Bluetooth versions lower than 4.0 can't be supported because of the platform restrictions, except with the exceptions mentioned in 1.2.

#### 2.2.2 WiFi Dongle

• Make sure that Wi-Fi is turned on on your device

To verify the status, navigate to your device's Settings -> Wi-Fi.

• Connect to the dongle network

Wait for your dongle to appear in the list of available networks. Tap the dongle network name and wait for the network connection to be established. Refer to the dongle user manual for the correct network name (SSID).

Please note that after you have connected to the dongle network, you will not have access to the Internet via a WiFi hotspot. All possible network data transfers will be made using your carrier.

• Select the correct connection type from the app settings

First, launch the OBD Auto Doctor app. Then, navigate to the *Extras* tab. Select *Connectivity* from the list. Make sure *WiFi* is selected as the connection method.

Verify the IP address and port. The default values are correct for most dongles. Refer to the dongle user manual for the correct values if the default values don't work.

ADAPTER		
WiFi	Bluetooth	
IP address	192.168.0.10	
Port	35000	

## 2.3 Connect to the Car

- Navigate back from the app settings to the *Status* tab.
- Tap the connect button at the top right corner of the view.



• Wait for the connection to be opened

The app will initialize the dongle and connect to the car. It will scan the vehicle configuration to detect what your car is capable of.

• Start using the app and get to know your car better

## 2.4 Troubleshooting

If you are unable to connect your car, please check the following.

• Make sure that your car is compatible with OBD2.

Check the 1.3 Vehicle Requirements of this document or visit <u>www.obdautodoctor.com/fag</u> for more details.

Having similar looking connector doesn't mean the car is OBD2 compliant. OBD2 is mandatory only for passenger cars. If you have a utility vehicle or large pickup truck, it might not have OBD2.

- Try connecting having the ignition key in the 'ON' position but the engine not running
- Try connecting while the car is parked and the engine is running
- Make sure the dongle is properly attached
- Make sure you are connected to the right Wifi network if you have a WiFi dongle

If you are still unable to connect your car, please do the troubleshooting within the app. It will enable some logging and give you the possibility to send the log to the developers for further help.

- Navigate to the *Extras* tab and select *Help*
- Proceed with the troubleshooting steps.

First, try to connect with the *Connect* button. It will turn some logging on.

Second, use the **Send log** button to send the log to the developers. Remember to send the message from the opened email client.

## 3. App Views and Functions

## 3.1 Status

The Status view displays selected sensor data in real-time. The view is designed so that you can monitor the data while you drive the car. The information is clearly visible for convenient distance so you can keep the device installed in a stand.

#### Warning:

We do not recommend that you drive the car while using the app for your own safety!



On the top, left corner of the view is the Engine Control Unit (ECU) selection button. Tap the button (in the image labeled ECM) to open the ECU selection. The list contains all OBD2 compliant control units from your car.

You can customize the visible values. Long press the slot that you want to change. A list of the supported sensors is opened. Pick the sensor that you want from the list. The values can be customized only when the connection to the car is open.

The speed and RPM values are fixed and then can't be changed. Only the slot values can be changed.

Use the same connect/disconnect button on the top right corner to close the connection after you are done using the app.

### 3.2 Trouble Codes

The Trouble Codes view displays a summary of the diagnostic trouble code information. On top, the app shows the Check Engine Light (CEL) or Malfunction Indicator Light (MIL) status. It will also show the distance drove and runtime since the last change. If the MIL is ON, the distance and runtime are since the MIL turned on. If the MIL is OFF, the distance and runtime are since the last reset.

You can also reset the diagnostic trouble codes and the MIL within this view. A confirmation dialog is presented for you before actually sending the reset command.

You can send the diagnostic information easily via email. Select the Action button ( $\uparrow \uparrow$ ) to open the email client with the info.



#### **Diagnostic Trouble Codes**

Diagnostics Trouble Codes (DTCs) are codes that the vehicle's electronic control unit (ECU) generates when it detects malfunction or other issues.

#### Freeze Frame

Freeze Frame is a captured recording of the engine's conditions at the time a malfunction is detected. The Freeze Frame contains DTC that caused the malfunction and snapshot of sensor readings.

#### DTC Database

The app contains an offline trouble code database for searching and browsing all the trouble codes. The DTC database contains over 18000 trouble codes that the software has descriptions for.

## 3.3 Diagnostics

The Diagnostics view displays a summary of the diagnostic information. On top, the app shows the readiness status for inspection. If none of the Readiness Monitors are incomplete, the car is ready for inspection. Having a single Readiness Monitor incomplete might cause the car to fail inspection. It depends on the car year model and local inspection requirements. Having two or more Readiness Monitors incomplete will most likely fail the inspection in every country.



#### **Readiness Monitors**

The readiness monitors self-test car emission systems.

You can read more about the Readiness Monitors from our website: www.obdautodoctor.com/scantool-garage/obd-readiness-monitors-explained/

#### **On-Board Diagnostic Monitors**

Mode \$06 is an advanced diagnostic functionality mode. It keeps track of how emission control components and other systems and sensors are functioning.

You can read more about the On-Board Diagnostic Monitors from our website: <u>www.obdautodoctor.com/scantool-garage/using-obd2-mode-06-for-advanced-car-diagnostics/</u>

### 3.4 Sensors

The Sensors view displays the selected sensor data in real-time. The data is updated only when you are in this view. If you navigate to some other views, the sensors in this view stop updating.

The sensors are updated as fast as the dongle and car are able to provide the data. For a typical dongle and car, this means about 10 updates per second. Some combinations are able to provide about 15 updates per second. Low-quality dongles or rather old cars might be able to provide data for only 5 sensors per second.

Use the plus sign ( +) to add or remove sensors from the view. Only sensors that your car supports can be monitored. See our website for an up-to-date list of the sensors that the app supports: www.obdautodoctor.com/obd-parameters

You can send the sensor data in CSV format as an email attachment. Select the Compose button ( $\square$ ) to open the email client with the attachment. The sensor data log is reset every time this view is entered. So if you navigate to some other view and then come back, the logging starts from the beginning. This is to keep the amount of the data within a reasonable size.

••••• ?	9:41 AM	10	0% 🔛 ·	
ECM	Sensors	ľ	+	
15.3 %	<b>15.3 %</b> Calculated engine	load	>	
8.6 inHg Intak	<b>8.6 inHg</b> & Manifold Absolute	e Pressu	> re	
28.6 inHg	<b>28.6 inHg</b> Barometric Press	ure	>	
1.01 Bank E	<b>1.01</b> 1 - Sensor 1 (wide ra iquivalence Ratio (la	ange O2 mbda)	S): >	
0.012 mA <b>0.012 mA</b> Bank 1 - Sensor 1 (wide range O2S): > Oxygen Sensor Current				
1.000 <b>1.000</b> Fuel/Air Commanded Equivalence > Ratio				
<b>Katus</b>	Trouble Codes Diagnostics S	ensors	Extras	

Let's look at a single sensor item in the list. The sensor name is located at the bottom center. On top of that is the current value. On the left side with a bit smaller font is the average value.

The graphical presentation of a sensor is opened by tapping the sensor. Only sensors with numerical values have the graph. This is also indicated by the small arrow on the right side of the sensor item.



## 3.5 Extras

Under the Extras tab, you will find information about the Electronic Control Unit and Adapter. You will also find the app settings, help, and upgrade sections.

### Electronic Control Unit Information

Electronic Control Unit (ECU) info view will display information about the ECU. This information includes the OBD requirements the vehicle is certified for, the communication protocol that is used, ECU name and description, Vehicle Identification Number (VIN), Calibration Identifications (CALID), Calibration Verification Numbers (CVN).

#### Adapter information

The adapter info view displays information about the OBD dongle in use. This information includes the device name, description, and version. The view will also show the battery voltage that is reported by the dongle.

#### **Connectivity Settings**

The connectivity settings view has options and preferences related to the connection.

**Adapter**: First, select the dongle type you have, such as WiFi or Bluetooth. Second, configure the dongle options.

**OBD Protocol**: The app configures the dongle to detect the used protocol automatically. This works with most dongles and cars. However, some dongles have difficulties detecting the protocol. That's why you can also set the protocol manually. Pick a non-automatic protocol to force the dongle to try the protocol. If you use the app with other cars, remember to turn it back to the automatic protocol selection.

**Auto-connect after launch**: Option to open the connection automatically after the app is launched.

#### Preferences

The preferences view has options and preferences related to the app's behavior.

**Units of measure**: Metric units follow the SI-defined metrical system (for example km/h, Celcius). Imperial units follow the English unit system (for example mph, Fahrenheit). All the used units are defined in the OBD2 standard and they can't be changed.

**Screen lock**: This option defines the app's behavior for screen dimming and locking.

**Sensor data logging**: This option must be enabled if you want to collect data in the Sensors view for sending it via email in the .csv format.

#### Vehicle Settings

The vehicle settings view has configuration parameters for the vehicle.

Fuel: Fuel type used for consumption calculation.

**Fuel correction factor**: Set only if the consumption reading doesn't match the expected reading. The calculated consumption value will be multiplied by this value.

**Volumetric efficiency**: Set only if you know the proper value for the car. This is needed only for MAP-based consumption calculations.

**Engine displacement**: This number is the volume of the engine in liters. It's only needed for MAP-based consumption calculations.

#### Help

The Help contains all kinds of help material for you to get started. It will also have a Troubleshooting section for sending data logs to the developers.

#### About

The About contains information about the app such as version numbers.

#### Upgrade

The Upgrade contains options to upgrade the app to the Pro version. The Pro version will unlock all the features of the app. You can also restore your previous purchase from this view. Visit the app website for more info and the differences between the versions: www.obdautodoctor.com/ios