



EngineVOX CAN Operation manual

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The use of the EngineVOX

EngineVOX is a universal programmable device for producing the high-quality sound accompaniment of various engines and devices for entertainment or safety purposes.

EngineVOX can be used to produce the high-quality sound both in the car interior and outside of the car (if used with the external speakers).

EngineVOX processes the data on the current speed as well as the engine load and plays the sound of another pre-selected engine (device) according to the user's preferences.

EngineVOX can be used in computer simulations, gasoline, diesel and electric cars, petrol and electric motorcycles, bicycles, radio-controlled models, demonstration projects, as well as in other similar vehicles and devices.

This manual describes the use of EngineVOX in cars that use the CAN bus to communicate digitally and control the vehicle's electrical devices.

Specifications

| | | |
|---|-----------------------|--|
| 1 | Mass | Approx. 50 g (1.8 oz) |
| 2 | External dimensions | Approx. 90,4 x 50,5 x 17 mm (35.5 x 19.8 x 0.6 in) (width x height x depth) |
| 3 | Power | 10-16 V, DC, power consumption not higher then 60 mA, in stand-by mode 500 μ A |
| 4 | Operating temperature | From -20°C to 85°C (from -4°F to 185°F) |
| 5 | Remote control | 1 input (REM), 10-16 V, DC voltage, input impedance 12.7 k Ω |
| 6 | Linear output | 2 outputs, up to 2.1 V, load not less than 1 k Ω |

Installation of the EngineVOX

Choose a location where you can install the EngineVOX so that the temperature requirements (specified in the [Specifications](#)) are met. The water, dirt and other aggressive environmental influences must be absent. There also should be the convenience of pairing with the existing and newly laid wiring.

Secure the device so that there is no additional vibration during operation and the possibility of mechanical damage to the device.

Connect the device to your equipment using the additional wiring in the sequence given in the Chapter [Connecting the EngineVOX](#).

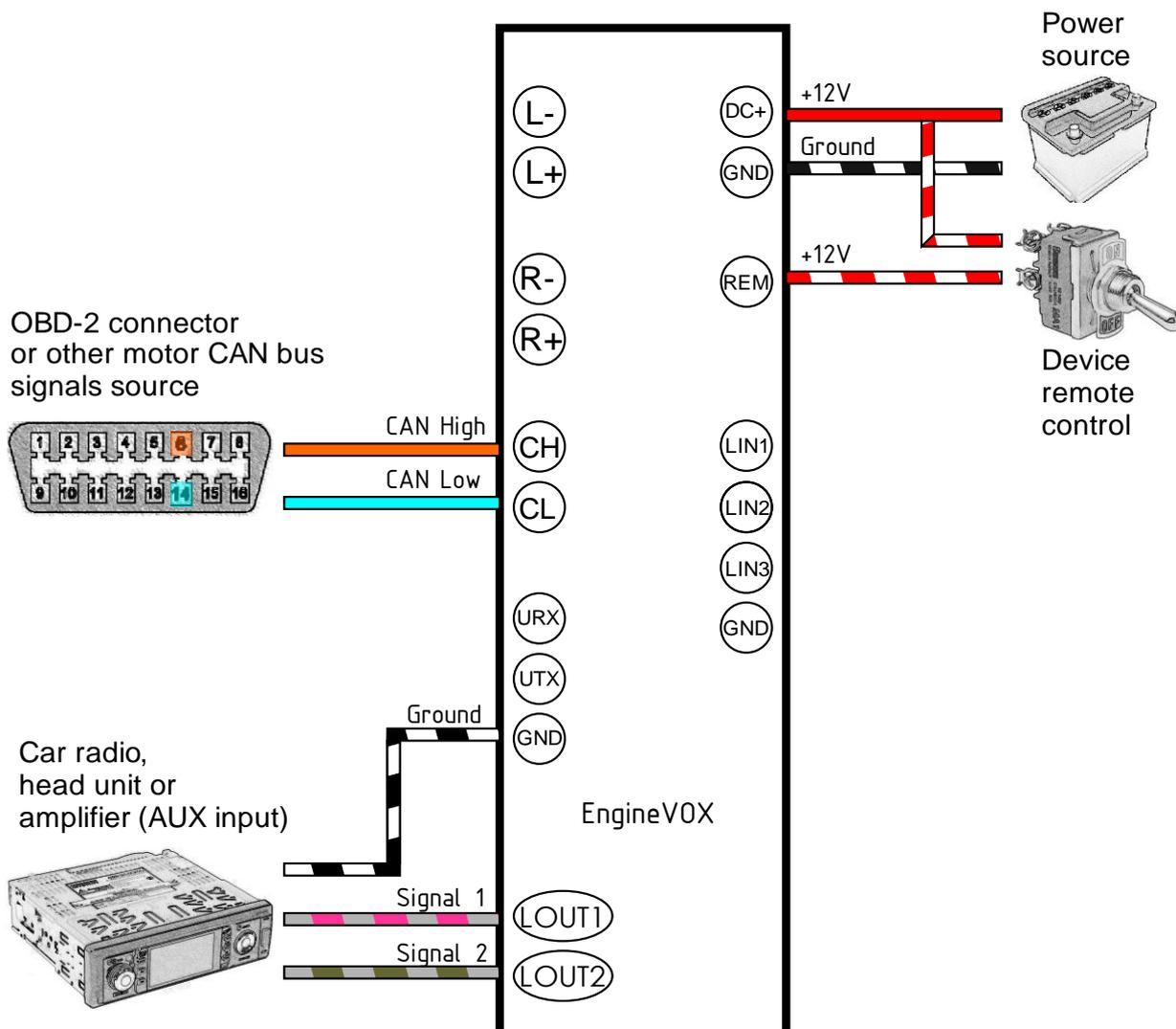
Make sure all contacts are securely fastened and isolated.

Connecting the EngineVOX

For the complete performance of the device, you must connect the device to the CAN bus of your car and the audio playback device, provide the device with power from the vehicle's onboard network, and select the method of starting the device.

The General schematic plan of the EngineVOX connection is shown in figure 1.

Figure 1.



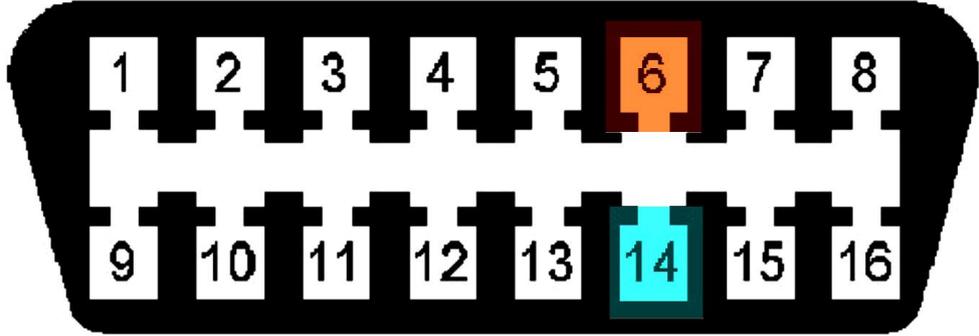
The device is connected in the following sequence:

1. Connection to the CAN bus of the car.

1a. Connection via OBD-2 connector.

Locate the OBD-2 diagnostic connector (usually located under the steering wheel). It is necessary to connect outputs #6 and #14 of OBD 2 diagnostic connector (see Fig. 1.1.) with outputs of CH and CL of EngineVOX device respectively.

Figure 1.1.



| PIN | DESCRIPTION | PIN | DESCRIPTION |
|-----|-------------------|-----|------------------|
| 1 | Vendor Option | 9 | Vendor Option |
| 2 | J1850 Bus + | 10 | j1850 BUS |
| 3 | Vendor Option | 11 | Vendor Option |
| 4 | Chassis Ground | 12 | Vendor Option |
| 5 | Signal Ground | 13 | Vendor Option |
| 6 | CAN (J-2234) High | 14 | CAN (J-2234) Low |
| 7 | ISO 9141-2 K-Line | 15 | ISO 9141-2 Low |
| 8 | Vendor Option | 16 | Battery Power |

OBD-II Connector and Pinout

1B. Direct connection to the bus CAN wiring or other connectors.

In some vehicles (VW, Skoda, Audi, BMW, Mercedes-Benz, etc.) usually the OBD-2 diagnostic connector does not have the data necessary for the correct operation of the EngineVOX device in the CAN High and CAN Low pins. In this case, you need to find the access to the motor CAN bus with the necessary data (CAN high and CAN Low lines) and connect the device to the CAN bus in this place. The connection is realized via connection of the signal line CAN High with the connector device CH and the line CAN Low with the connector device CL, respectively.

Note: When connecting to the CAN bus, try to use the minimum possible wiring length.

Note: It is also strictly forbidden to connect only one of the two lines.

2. Connection to the sound reproduction systems

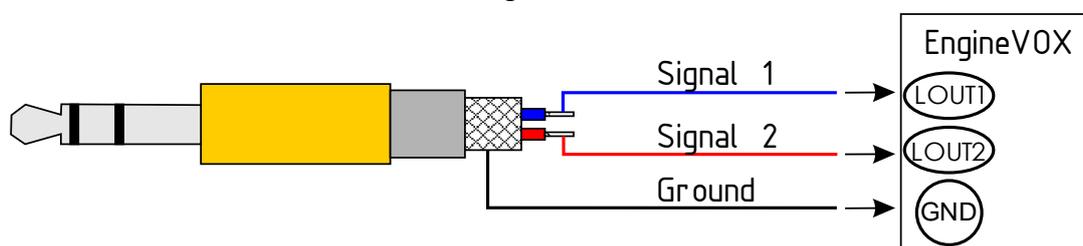
Depending on the location of the sound speakers, it is possible to use the EngineVox to reproduce the sound of the engine running in the car or to play outside the car (when using external speakers).

To play sound through your car's speaker system, you must connect the linear audio outputs of the EngineVOX device to the line input (AUX) or line inputs (RCA) of the car radio or head unit in your car.

If your car has an audio system with an additional amplifier, you can connect directly to the amplifier via the line input (AUX), line inputs (RCA) or another way to transmit audio signals.

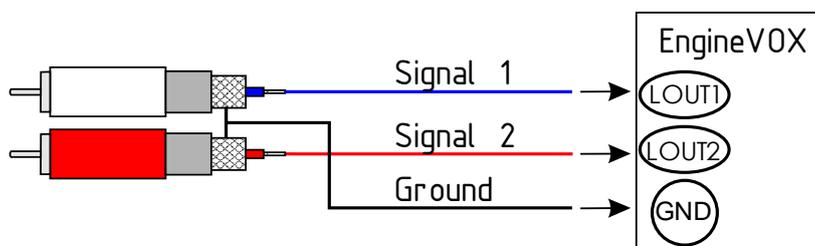
It is recommended to use an adapter cable with TRS connector (mini jack) for connection. The connection plan is shown in Fig. 2.1.

Figure 2.1.



It is possible to use an adapter cable with RCA connectors. The connection diagram is shown in Fig. 2.2.

Figure 2.2.



Note: Try to use the minimum possible length of the adapter cable for the connection.

Note: The supported input voltage for the line inputs of your equipment must be not less than specified in the "[Specifications](#)" section.

Note: The resistance applied to the outputs OUT1 and LOUT2 must not exceed the values specified in the "[Specification](#)".

3. Power connection of the EngineVOX.

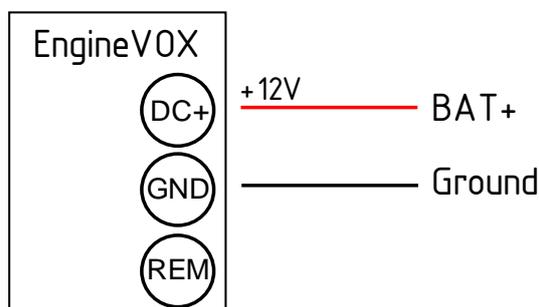
To provide the device with power supply from the vehicle's onboard network (with an output voltage from 10 to 16 V), it is necessary to connect the DC+ and GND connectors of the device to the vehicle's onboard network.

The connection is made with the following polarity:

- supply + 12V to DC+ connector;
- connect GND connector to chassis ground (Ground signal).

It is advisable to connect the device to the power supply which works in the absence of a key in the ignition of the car, for example, the power signal BAT+ of your car radio, head unit or amplifier, in accordance with the scheme in Fig. 3.1.

Figure 3.1.



When the power is connected to the DC + connector (if there is no power on the REM connector, see item 4), the indicator light of the device will turn red for 3 seconds and then turn off. The device initializes and enters standby mode.

Note: The current consumption of inputs is specified in the "[Specifications](#)" section.

Note: To reduce the possibility of noise when the equipment is operating, it is recommended to use the same power supplies as those used to power your car radio, head unit or amplifier.

4. Power connection of the device

Start of EngineVOX is carried out by giving a remote control signal to the input REM of the device (the appearance and constant presence of power (+12 V) at the input REM).

Switching off of the device is implemented when the remote control signal is disconnected at the input REM of the device (no power supply at the input REM).

The device can be controlled in one of two modes: automatic or manual.

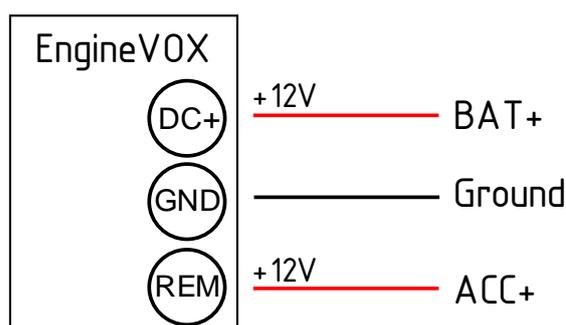
4A. Automatic on and off mode.

In this mode, the device is automatically switched on when the key in the ignition is turned to the ACC position and automatically turns off when the key is turned to the OFF position.

To start in automatic mode, you must connect the REM connector of the device to the ACC+ signal wire of the power supply of your car radio, head unit or amplifier in accordance with the scheme in Fig. 4.1.

In this mode, the mute mode and deactivation of the sound played by the device is carried out by the selected mode of operation of your radio, head unit or amplifier (enabling and disabling the audio listening mode from the AUX line-in input).

Figure 4.1.



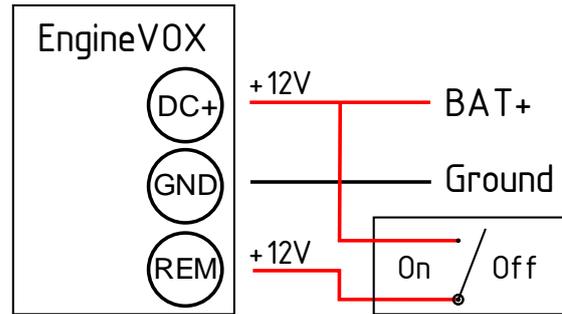
4B. Manual mode on and off.

In this mode, the device is switched on and off by an additional two-position switch (toggle switch, button, etc.).

To start in manual mode, it is required to connect the remote control according to paragraph 4A of this manual, and additionally install a two-position switch in the break of the control line from the REM connector of the device to the signal wire ACC+ power supply of your car radio, head unit or amplifier in accordance with the scheme in Fig. 4.2.

In this mode, the sound is switched off and the device is switched by the selected position of the external switch (on or off).

Figure 4.2.



Note: The voltage of the control signal must not exceed the values specified in the "[Specification](#)" section.

Turning on and off the EngineVOX

Before operating the device, ensure that you have met all of the instructions in sections "[Installation of the EngineVOX](#)" and "[Connecting EngineVOX](#)".

Turn on the EngineVOX device by applying the voltage to the input of the remote device management (REM). It is possible to turn on the device automatically or manually ([see p.4. section "Connecting EngineVOX"](#)).

When the input voltage (REM) is applied, the device is initialized and goes into operation mode. The indicator light will flash red for a second and then the indicator will light green.

Turn off the EngineVOX device by terminating the voltage input (REM). This will make the device go into standby mode.

Precautions

Before installing, connecting, and using the device, carefully read this manual to avoid the risk of damage to the equipment.

The device intended for entertainment purposes only and **not** for use on public roads.

Consult the manufacturer to make sure that the device will work correctly with your car.

The installation and connection of the device must be carried out by the qualified personnel. Installation and connection of the device by people without proper qualification may result in damage both to the device and the equipment on which the installation is performed.

Installation and connection of the device must be performed when the power supply of the vehicle is disconnected.

All contacts must be securely fastened and isolated during connection.

The device must be used only for its intended purpose.

The manufacturer does not bear the responsibility for any loss or damage, including but not limited to direct or indirect loss or damage, or any other loss or damage, resulting from the installation or use of our device.

The manufacturer guarantees the replacement of the faulty device if the request for replacement of the device was sent to our address within 12 months from the date of purchase and the defect was not caused by improper installation, incorrect connection, or improper handling (damage by temperature, mechanical damage, corrosion by water etc.)