

CHIPSOFT J2534 Mid



Technical characteristics of the **CHIPSOFT J2534 Mid adapter**:

- modern powerful 32-bit ARM processor 72 MHz
- work under the rule of the real-time operational system (RTOS)
- support of the bus USB 2.0 Full-speed
- update of the adapter firmware via USB
- support of J2534 standard, partial support of J2534-2 standard
- protection from polarity reversal, static stress
- dual power to provide safe work (+5V USB socket, +12V/+24V OBD2 socket)
- support of power 24V to work with trucks and buses
- set programming voltage 5 - 20V with the step 0.1 V onto pins 8, 9, 11, 12, 13 of the OBD2 socket, maximum current is equal to 20 mA
- support of Single wire CAN bus (SW CAN)
- support of the second CAN BUS on pins 3 - 11 of the OBD2 socket (can be also crossed to pins 1 - 8, 12 - 13 via soldering bridges on the OBD2 plate inside the adapter)
- indication of the operating mode via 3 LEDs
- OBD2 case
- Mini USB socket to connect to the computer

Support of the following protocols:

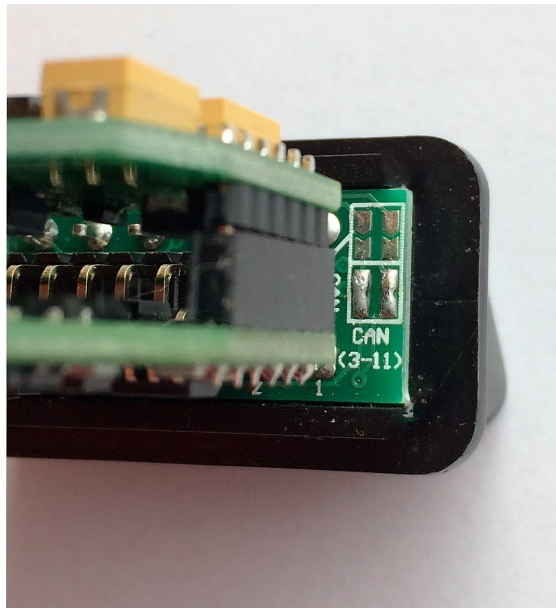
- ISO 11898 (raw CAN) up to 1Mb/s
- ISO 15765-4 (CAN)
- ISO 14230-4 (Keyword Protocol 2000)
- ISO 9141-2
- GM UART
- SW CAN

Used OBD2 pinout of the adapter on default:

- 1 - SW CAN
- 3 - CAN Hi (second CAN BUS)

- 4, 5 - Ground
- 6 - CAN Hi (main CAN BUS)
- 7 - KLine (GM UART, ISO 9141-2, ISO 14230-4)
- 8 - can be used for setting voltage 5 - 20V
- 9 - can be used for setting voltage 5 - 20V
- 11 - CAN Lo (second CAN BUS), can be used for setting voltage 5 - 20V
- 12 - can be used for setting voltage 5 - 20V
- 13 - can be used for setting voltage 5 - 20V
- 14 - CAN Lo (main CAN BUS)
- 15 - LLine (can also be short to the ground)
- 16 - +12V (in order to measure the voltage in the OBD socket and adapter power backup)

The second CAN BUS can be also crossed to OBD2 pins 12 - 13 (GM group vehicles), 1 - 8 (Fiat vehicles) by the user oneself. Bridges for crossing are located on the OBD2 plate:



Warning: Please pay your attention to the fact that after you cross the CAN BUS to other pins, the pinout functionality will be also changed. That is if you cross the second CAN BUS and give an order to set voltage onto 11 pin of OBD2, then you will set the voltage to the pin where CAN Lo was crossed. Crossing of the second CAN BUS can be useful for diagnostics of some additional vehicle systems (ABS, multimedia and others) which can be located in various cars on different OBD2 pins.

The adapter is a universal device able to work in various modes:

- J2534 compatible device
- K-Line adapter
- CANHacker

The adapter supports the protocol ISO22900 and works with Tech2Win.

Initially the device works as a J2534 compatible device.

You can change the device mode using the shortcuts located in Start- Programs - CHIPSOFT J2534 Mid:

- Make J2534
- Make K-Line
- Make CANHacker

For convenience you can set these shortcuts on your desktop.

Setup file

You can configure additional settings for each adapter with editing the configuration file *options.json* which is located in the Folder *C:\ProgramData\CHIPSOFT_J2534*.

In this file you can configure settings for all the adapters CHIPSOFT J2534 (Lite, Mid, Pro). The settings for each adapter are located in the corresponding sections "Lite", "Mid", "Pro":

```
{
  "LogLevel": 10,
  "Lite": {
    "OpenPort2Mode": true
  },
  "Mid": {
    "OpenPort2Mode": true,
    "RemapAUXToPIN": 12
  },
  "Pro": {
    "OpenPort2Mode": true,
    "RemapAUXToPIN": 12
  }
}
```

The parameter "LogLevel" is common for all the adapters and is foreseen to carry out writing of its own log. By default this parameter is set as 10. The value more or equal to 10 turns off writing a log. Please pay your attention to the fact that writing a log slows down the adapter work. To get additional information about writing a log it is necessary to apply to the Chipsoft technical support team per e-mail. The other settings are described in the section *Mode of J2534 compatible device*.

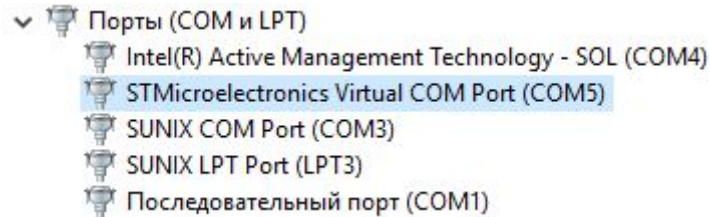
While re-installing the J2534 driver the installation program is not re-writing this setup file. That is why in order to configure settings by default it is necessary to delete the file *options.json* and re-install the J2534 drivers.

After changing the settings it is necessary to re-start the program which is working with CHIPSOFT J2534 Mid adapter.

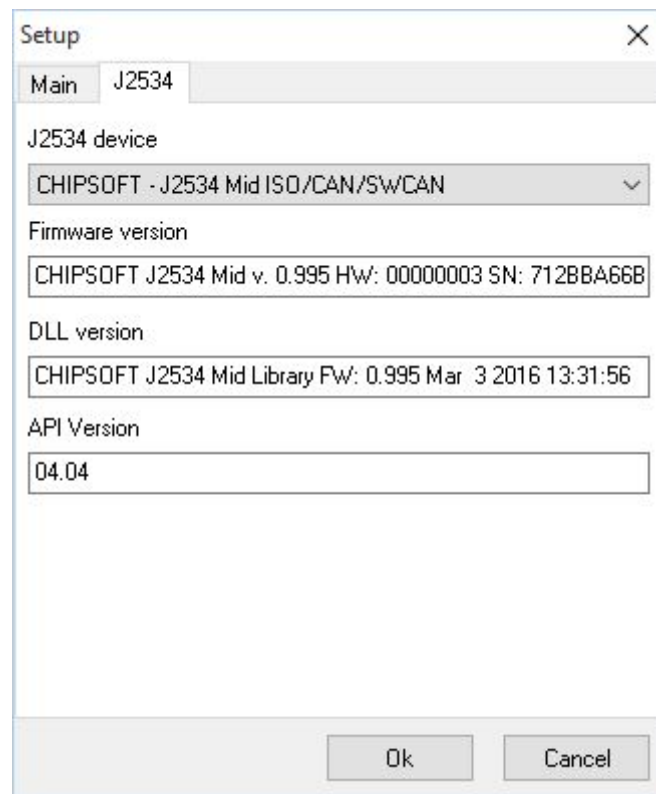
Mode of J2534 compatible device

In order to work in this mode you need to install 2 drivers types:

1. Device driver (after its installation the device will appear in the Device manager as an STMicroelectronics Virtual COM Port):



2. J2534 driver (after its installation the device will be determined with programs which work via the J2534 compatible device):



LEDs indication in this mode has the following meaning:

- Colour change by turn (three colours) - standby mode
- Red - data interchange via CAN
- Green - data interchange via K-Line
- Yellow - data interchange via USB

Driver settings

In order to work with some ECUs you need to set programming voltage onto the external boot pin (it is not located in the OBD2 socket). Taking into account that there is no additional AUX socket in the adapter to set such voltage and some loaders may inquire to set such voltage onto such a socket, one can solve such an issue with remapping. In this case

remapping means that in case of getting an enquiry to set the voltage to the AUX socket the J2534 driver transfers setting voltage to any of the following pins of the OBD2: 8, 9, 11, 12, 13. You can do it with editing the parameter "RemapAUXToPIN" in the section "Mid" of the setup file. By default this parameter is set as 12.

```
"Mid": {  
  "OpenPort2Mode": true,  
  "RemapAUXToPIN": 12  
}
```

The parameter *RemapAUXToPIN* is in charge of the OBD2 pin number to which remapping is carried out. In our case for example we carried out remapping from UAX socket to 12 pin of the OBD2 socket. After remapping 12 pin (or pin onto which remapping has been carried out) can be brought out from the adapter and can be used as external boot pin.

Taking into account that plenty of loaders are oriented to work with Tactrix Openport2 which has several errors as for correct work of the J2534 driver, we added Openport2 compatibility mode. There is a separate parameter "OpenPort2Mode" in the section "Mid" of the setup file created specially for this mode. By default this parameter is set as *true*.

```
"Mid": {  
  "OpenPort2Mode": true,  
  "RemapAUXToPIN": 12  
}
```

In order to turn off the Openport2 compatibility mode it is necessary to change this parameter to *false*. You should do this so that the adapter works correctly with the loader BitBox.

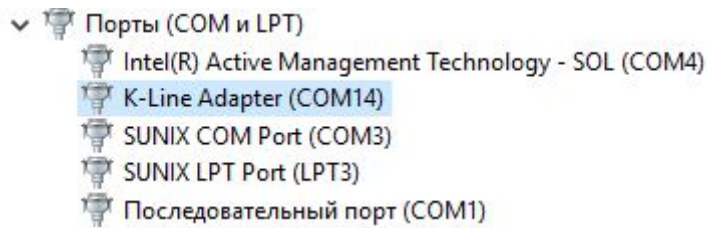
Please note that for ChipLoader and MDFlasher programs, changing this parameter does not affect the program's operation in any way. ChipLoader always uses Openport2 compatibility mode, MDFlasher does not use Openport2 compatibility mode regardless of this setting.

Mode of the K-Line adapter

LEDs indication in this mode has the following meaning:

- Playing yellow - standby mode
- Red - the voltage +12V and higher comes to the K-Line adapter
- Green- interchange via K-Line

After you install the J2534 device drivers you will see the folder "drivers" set on your computer. In order to work in the K-Line mode you need to install additionally the K-Line adapter driver ((kline_driver.inf)) which is located in the afore mentioned folder "drivers".

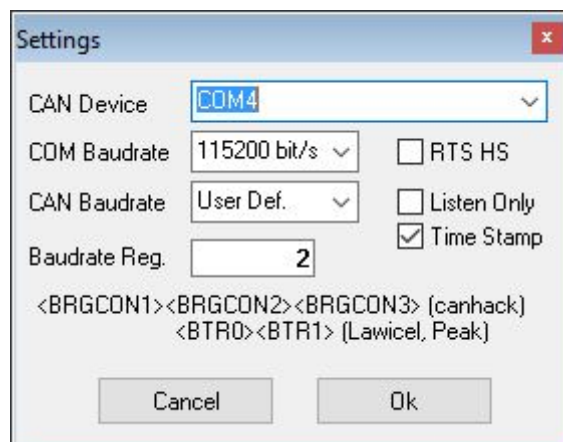


Please pay your attention to the fact that this driver is provided without the digital signature that is why Windows can show you the corresponding window about that. In order to install the driver on Windows 10 you need to disable the digital signature control of drivers.

Mode of CANHacker

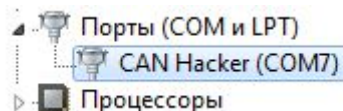
In this mode the device is compatible with the lawicel protocol which is used with the well-known program CANHacker (this program does not work on Windows 10!) as well as with some other programs.

The only difference is User Def speed setup. To set the speed you need to set the divisor value (in the denary system within the frames from 1 to 65535) in the "Baudrate Reg." line in order to get the necessary speed (the dividend takes the value 1000000). That is with the value 2 we will get the speed $1000000 / 2 = 500000$, correspondingly with the value 3 we will get the speed $1000000 / 3 = 333333,333$ and so on:



There is no LEDs indication in the CANHacker mode.

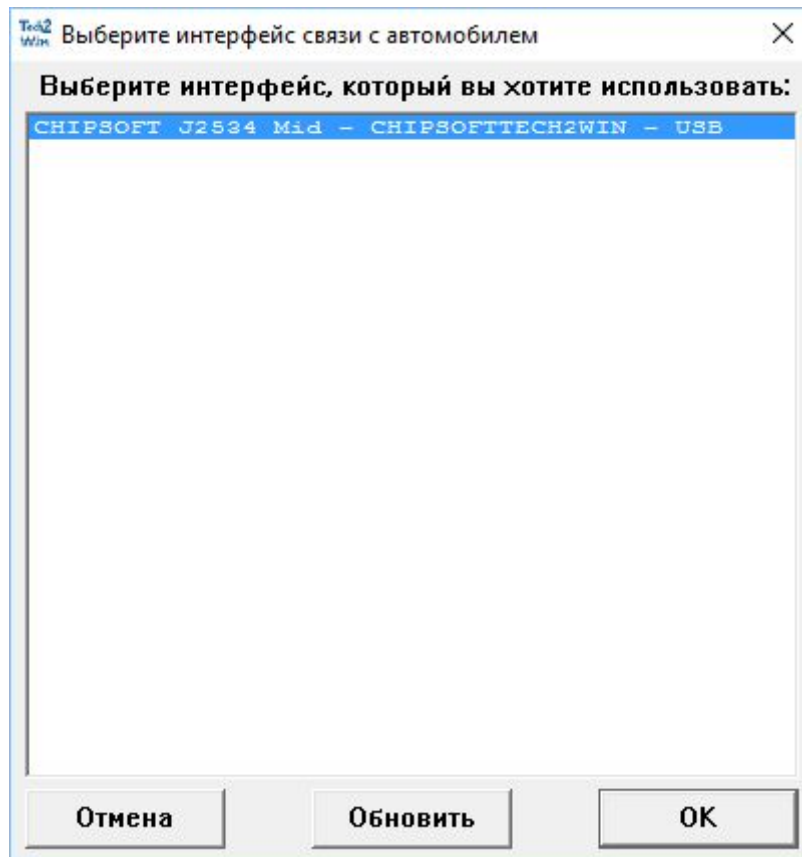
After you install the J2534 device drivers you will see the folder "drivers" set on your computer. In order to work in the CANHacker mode you need to install additionally the CANHacker adapter driver (canhacker_driver.inf) which is located in the afore mentioned folder "drivers".



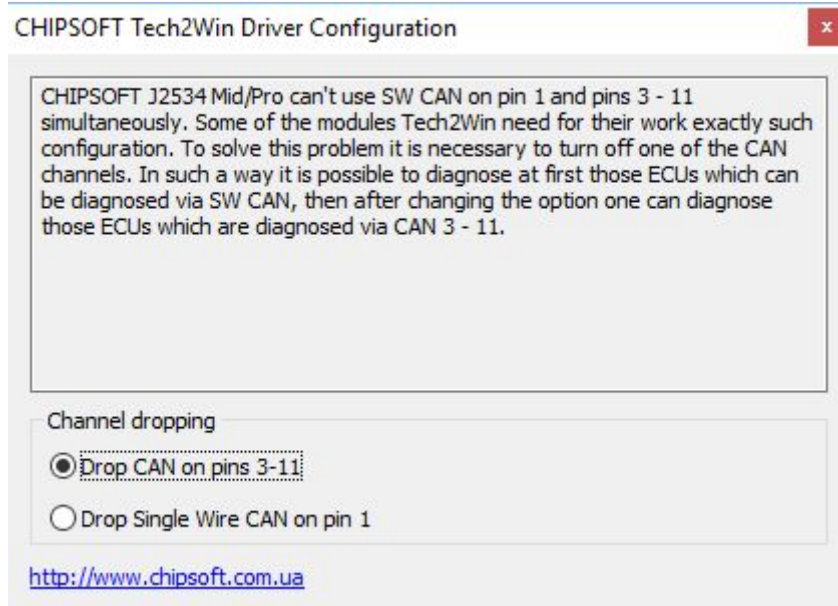
Please pay your attention to the fact that this driver is provided without the digital signature that is why Windows can show you the corresponding window about that. In order to install the driver on Windows 10 you need to disable the digital signature control of drivers.

Tech2Win

In order to work with the program Tech2Win the adapter should be in the J2534 mode. All the Tech2Win drivers are installed automatically while installing the program. If you do everything correctly, then while starting the program Tech2Win with the connected device it will appear in the list to choose:



CHIPSOFT J2534 Mid can't use SW CAN on pin 1 and pins 3 - 11 simultaneously. Some of the modules Tech2Win (for example, Opel) need for their work exactly such configuration. To solve this problem it is necessary to turn off one of the CAN channels. In such a way it is possible to diagnose at first those ECUs which can be diagnosed via SW CAN, then after changing the option one can diagnose those ECUs which are diagnosed via CAN 3 - 11. You can do it with the special configuration utility *CST2WinConfig.exe* which is installed automatically together with the drivers:



After you change the setups the program Tech2Win will use these setups during next start.

As for the ECUs working via KLine at this moment the driver ISO22900 supports work in the program Tech2Win only via KLine on 7 pin.

Peculiarities in switching the adapter modes

Please pay your attention to the fact that in order to switch from one mode of the device to another you need to install all the necessary drivers correctly for each device type. Otherwise you will not be able to switch to another device mode.

While switching the device mode the adapter comes into the boot mode (a red LED starts blinking) where rewriting of the corresponding firmware depending on the adapter mode is carried out.

In case there is any failure while switching the adapter mode you can just start the process of switching again. In such a case there will be no adapter failure even if you turn the power off.

Please pay your attention to the fact that every time when you switch the adapter mode the part of the processor FLASH memory has been re-written. The processor producer guarantees not less than 10,000 times of such successful re-writings before the FLASH memory will fail.

WEB: <http://www.chipsoft.com.ua/>