

Guidance and practice for SM2 J2534-RP1210, version 1.0.0.31 from 15.12.20

PLEASE READ THE FOLLOWING DOCUMENT ATTENTIVELY BEFORE USING SCANMATIK SM2/SM2-PRO ADAPTERS IN J2534 / RP1210 MODE. HERE COME THE ANSWERS TO THE MOST POPULAR QUESTIONS AND PARTICULAR QUALITIES OF WORK WITH POPULAR PROGRAMS

ATTENTION! Since version 1.0.0.13, the principle of connection to adapters via J2534 (in RP1210 it is the same) has changed. Now instead of one **"Scanmatik - SM2"** device, the programs will see separate **"Scanmatik - SM2 USB"** adapters and one or more **"Scanmatik - SM2 Bluetooth Axxxxx."** This feature allows you to switch the type of USB / Bluetooth connection without coming back to configurator menu . You need to re-bind your adapters over Bluetooth, so after moving to 1.0.0.13 from an earlier versions, you need to run SM2 Configuration J2534-RP1210 and create Bluetooth connections. In programs that use J2534, you need to specify a new adapter name in your settings.

See [here](#) for a description of the new configurator.

Introduction

The J2534-RP1210 driver for the SM2 adapter gives the chance of work with a large number of the another programs designed for work via the J2534 interface. The purpose of development of the driver for SM2, was to create the device which is most conforming to requirements of J2534 and RP1210 as far as it allows the adapter hardware. At a final stage careful testing in actual practice in which more than 300 users took part is held, on their responses defects were eliminated and features of work of some programs are considered.

1. Features of the implementation of J2534 and RP1210C

Copliance to requirements of the **RP1210C** standard – without any restrictions. The SM2 completely replaces DPA5/Nexiq/Inline-6 devices with support of all protocols both faster and convenient connection on Bluetooth.

Implementation of J2534-1/2 standards has the following features:

- ODIS, MB-DAS, Consult 3 programs implement capabilities beyond the J2534 standard, such as K-line multiplexer and ignition switch status emulator are realized
- Adapter SM2 allows you to work with vehicles with 24V power supply voltage.

The SM2 adapter (not SM2-PRO) has the following limits:

- 5-20V programming voltage supply is not supported (many cars need to be programmed up to ~ 2005MY). Short circuit same pins to ground is supported.
- In the adapter SM2 on the pull-up of K-lines there are used resistors rated 1KOhm, which leads to problems in operation at maximum speeds (125-150Kbps) in loaders for ME17.9.7/M74/EDC7/EDC16/EDC17 ECUs and others. Therefore, you should specify the minimum speed for the K-line (no more than 57.6kbit/s) in the loader settings or [replace one resistor inside](#) the adapter and forget about this problem.
- The adapter is sensitive only to the voltage threshold of the car power supply system, so at the onboard

power voltage below 7V the driver will provide information that voltage = 7V, if more, it will provide information onboard voltage = 13.7V.

- The SM2 adapter has built-in resistors on CAN buses (1kOhm), so in most cases, when working with ECU "on the table", it is not necessary to connect an additional 120 Ohm resistor between CAN-H/CAN-L, but its connection will not be prevented.

[Features compared to other popular adapters](#)

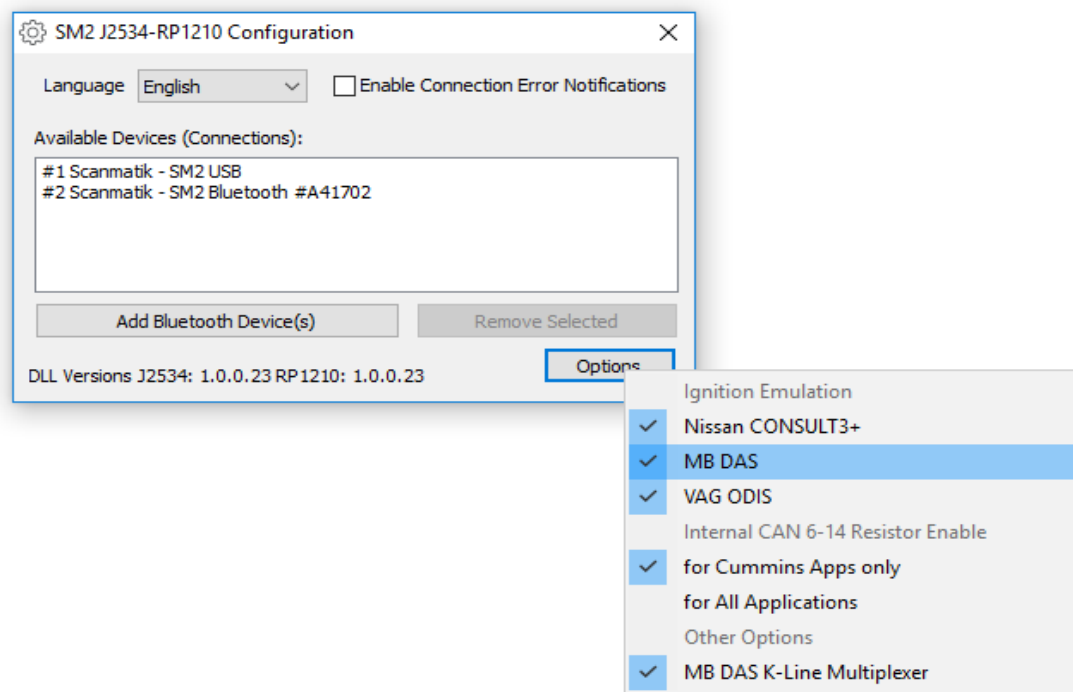
2. Installation, set up of communication and options

The J2534-RP1210 drivers for the SM2 adapter are installed together with the Scanmatik diagnostic program. It is necessary to ensure that the firmware version of the adapter is the same like drivers and scantool program version.

Set up of communication

After the program is installed, the single **"Scanmatik — SM2 USB"** adapter will appear in the list of available devices in the programs that use J2534 or RP1210 interface. Optionally, You can create one or more Bluetooth connections if you have multiple adapters. **Connection settings in Scanner and J2534-RP1210 drivers are not linked to each other.** If you are working with the J2534/RP1210 driver, you should close the Scanmatik diagnostic program and vice versa.

SM2 J2534-RP1210 Driver Configurator:



- Close all programs that use J2534/RP1210 driver
- Via the Windows Start Menu, run "SM2 Configuration J2534-RP1210"
- Click "Add Bluetooth device(s)."

- Provide Power to adapter(s) by connecting them to a USB port or vehicle DLC/ Lighter.
- The program will find all adapters and list them.
- Add the required adapters from the list.
- It becomes possible to disable/enable 1)the ignition switch status emulator for programs CONSULT3, DAS, ODIS 2); K-line multiplexer for MB DAS (by default all items are enabled)
- Changes take effect immediately ("Save and Leave" buttons are no longer available).
- After all necessary connections are created, open programs that run on the J2534/RP1210 and select the connection you need.

Therefore, each program can use different connection type. For example, you can configure bootloaders to run via "Scanmatik - USB SM2" and diagnostic programs via Bluetooth connections.

3. Refinement of the SM2 adapter (K-line tightening)

IMPORTANT! This completion concerns only SM2 adapters(not SM2-PRO!). It allows you to work with data exchange rate above 57.6 kbit/s only in those bootloaders that use this feature. If you do not use the bootloaders mentioned below, please skip this section.

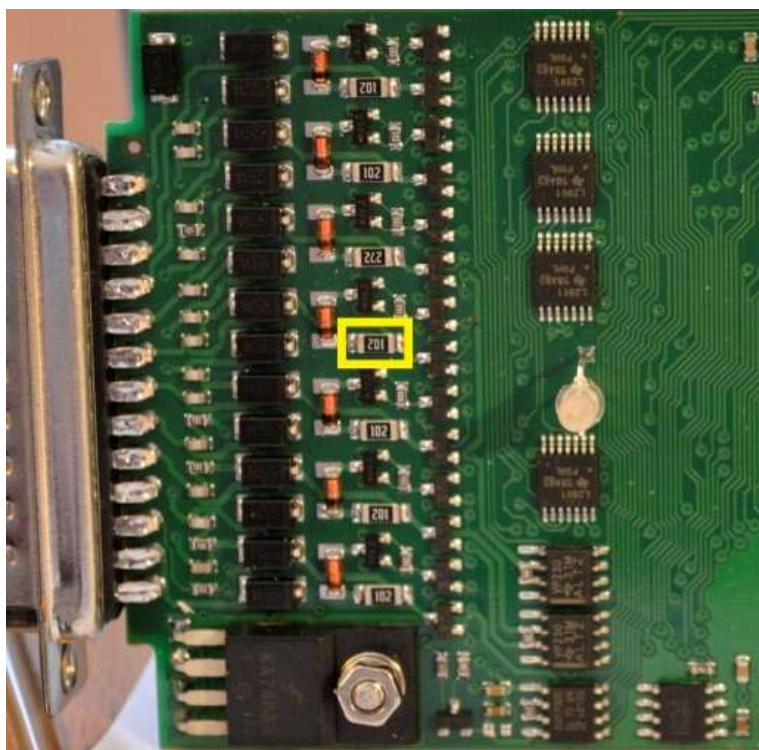
In bootloaders (Combiloader, PCMFlash and others), the maximum exchange rate (up to 150 kbit/s) on the K-line for ECU types ME17.9.7 / M74 / M75 / EDC7 / EDC17 and others is used by default. Work at such speeds requires an adapter with a K-line pull-up resistor of no more than 510 Ohms. But the SM2 adapter (as well as many others) uses K-line pull-up resistors with a nominal value of 1K Ω , which makes it impossible to read and write the listed ECUs at speeds above 57.6 kbit/s.

There are two ways out:

1) set the "minimum" speed in the settings of the bootloader program (up to 57.6kbps)

OR

2) disassemble the adapter and solder a 1 kOm resistor "sandwich" on top of the one shown in the figure (frame size of resistor chip 1206 type):



Top side of the board (with LED)

NOTE. In our opinion, the use of such high speeds is not justified, since the likelihood of communication failure and compatibility problems with J2534 devices increases. For example, the reference device J2534 DrewTech Cardaq 2 Plus has the same 1KOhm resistors for lifting K-lines and does not work at such speeds with the aforementioned loaders and blocks. We recommend to replace the resistor solely in order not to constantly answer the question “why Openport did work at maximum speed, but SM2 did not?”.

4. Ignition switch status emulator

NISSAN CONSULT3 +, VAG ODIS, MB DAS programs do not have any ability to monitor the ignition switch status via J2534 adapters, however, the ignition must be turned on / off for many of the procedures in these programs. Therefore, the SM2 J2534 driver implements ignition emulators for these programs (the ignition switch status is set manually).

While connected via SM2, the ignition emulator window appears automatically if it's enabled in the [configurator options](#) (enabled by default). It looks like this:



Ignition switch status Emulator for NISSAN CONSULT3+



Ignition switch status Emulator for VAG ODIS



Ignition switch status Emulator for MB DAS

If you press any free space in the emulator window, the “Ignition ON” state shows that it’s switched on / “Ignition OFF” - the ignition is off.

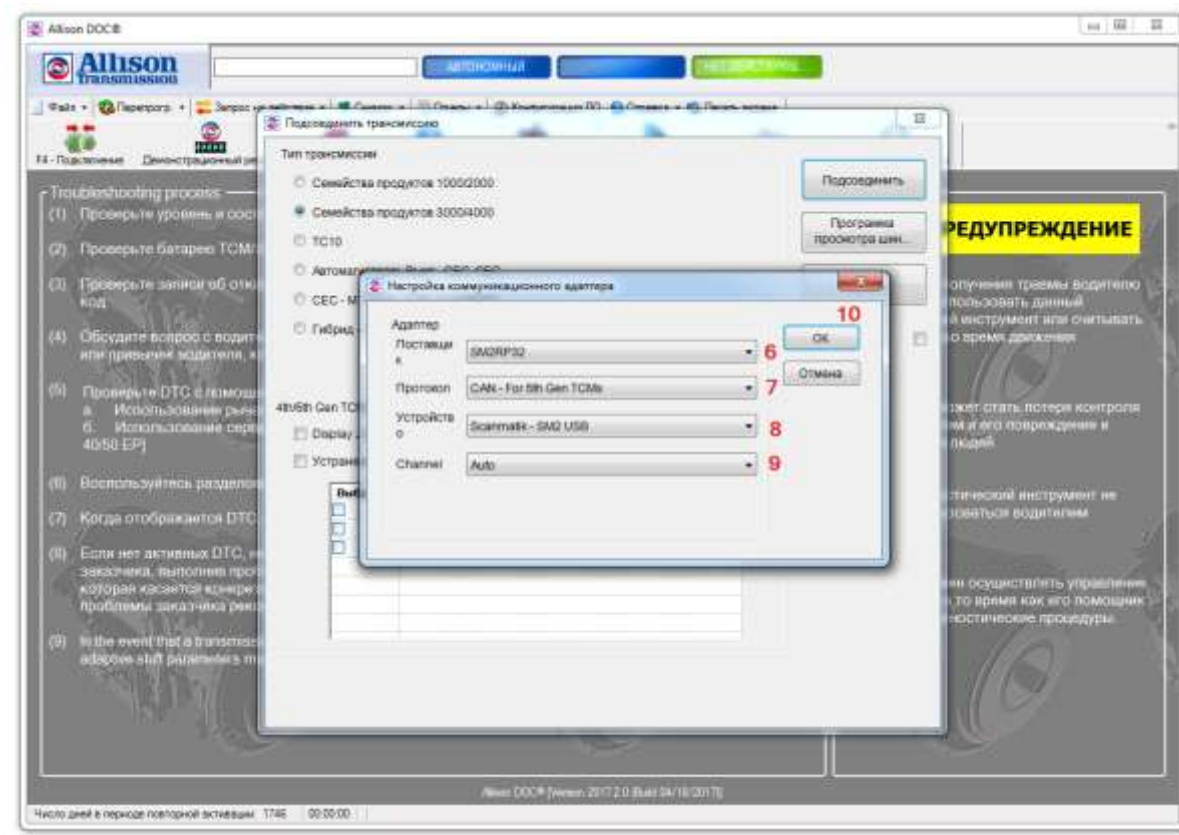
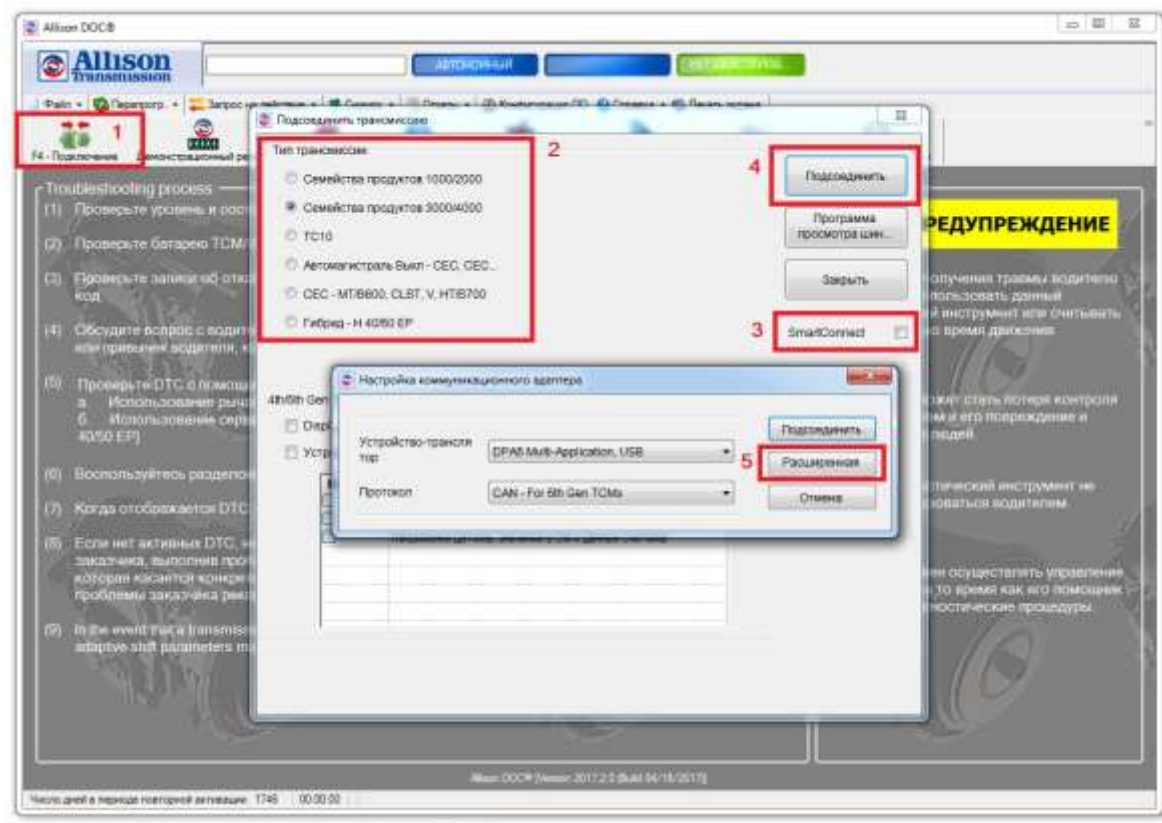
5. Features of work and program settings

When you start most programs, they suggest you to select the default PassThru adapter. Please select “SM-2”. You can see the features of setup and operation of some programs below.

5.1 Allison DOC

The program does not allow you to select the SM2 adapter immediately, you need to connect with the following procedure:

- 1) In the main window of the program, click “F4-Connection”.
- 2) Choose the type of transmission.
- 3) Uncheck the “Smart Connect” item.
- 4) Press the “Connect” button.
- 5) Click the “Advanced” button.
- 6) In the “Provider” field, select “SM2RP32”.
- 7) In the “Protocol” field, select the protocol (CAN Gen5 / J1939 / J1708) depending on the transmission model.
- 8) In the device field, select the SM2 adapter (USB or Bluetooth).
- 9) In the “Channel” field, select “Auto”.
- 10) Click “OK” - the program will begin to establish communication.



5.2. Combiloader

The modules marked "J2534 / + J2534" are fully supported.

ATTENTION! Work with the SM2 adapter at the maximum exchange rate on the K-line is possible ONLY after [the completion of the SM2 adapter](#). Otherwise, if in the module settings (the "advanced" tab) there is an item for selecting the exchange speed rate, select "minimum" or "low".

Please pay attention:

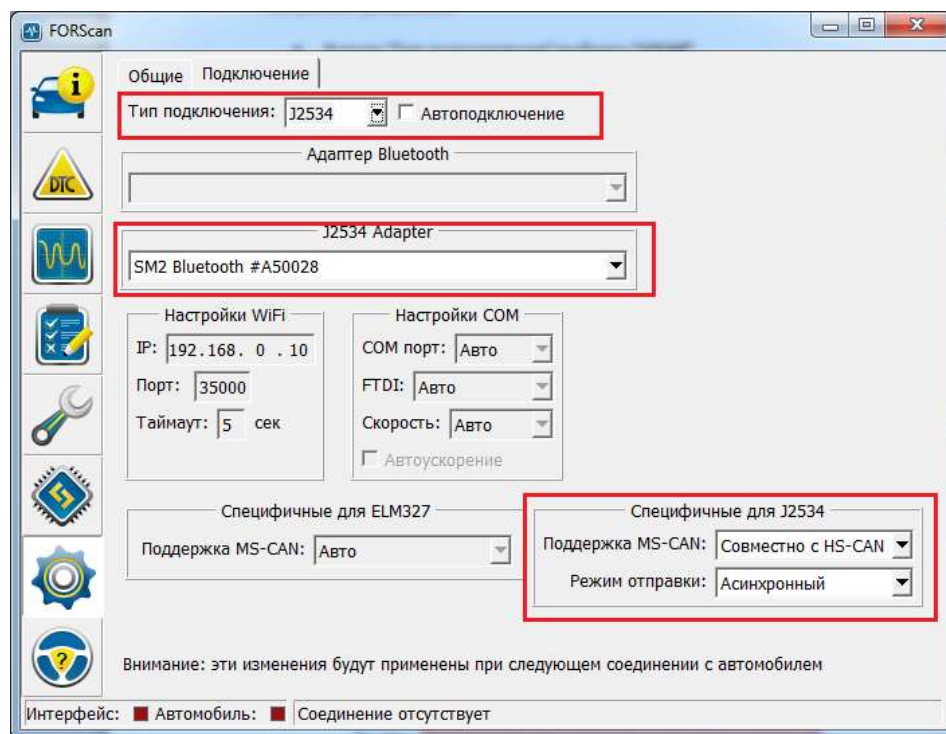
- Some modules imply a minimum delay time between sending a request and receiving a response from the computer, mainly when reading firmware. This condition can be provided only by connecting the adapter via USB. While connected via Bluetooth, the speed may decrease by an order of magnitude.
- Modules marked "+ J2534" (**not "J2534"!**) can be automatically connected via CAN or K-line, depending on the ECU modification. However, the J2534 adapter in these modules is used only for connection via the CAN bus. For the operation of such modules on the K-line, you need to connect the native adapter "PAK bootloader" to the computer. The program does not indicate which adapter was used when an error occurred, which greatly complicates the search of failed adapter.
- "BSL Mode TC17xx (J2534) version 1.43" module: for reading / writing VAZ ME17.9.7 (TC1762) ECUs sometimes it took several attempts to "turn off / on the power + ignition of the ECU with the 87th processor contact closed to ground, press read / record ". A "Synchronization Error" or "No Computer Response" was issued. The behavior of the program is verified with the Dialink adapter, Cardaq-2 Plus - similarly.
- Module "MIKAS-12 / M74.5 / M75 / M86 / M86I (+ J2534) version 1.9" - if the reading or writing process is interrupted, the computer remains in programming mode and no longer communicates. The "Advanced / End programming" button works only after the ECU is completely turned off / on (just like resetting the car battery terminal). the behavior of module was verified with the Dialink adapter and it showed the same result. Identified on M74.5 CAN.

5.3. Forscan

Full support for vehicles with CAN-6-14 / CAN-3-11 / J1850PWM / K-Line (ISO) bus.

Program settings:

- In the "Connection type" field, select **"J2534"**
- In the "J2534 Adapter" field, select **"SM USB"** or **"SM2 Bluetooth #Axxxxx"**
- In the "MS-CAN Support" field, select **"Together HS CAN"**
- In the "Send mode" field, select **"Asynchronous"**, as shown in the figure:



5.4. GM GDS-2/SPS

ATTENTION! The DVD versions from 2011 that you can find on the Internet do not work through J2534. GM offers an affordable subscription to the dealer software for diagnosis and programming of Opel / Chevrolet cars (registration on the website <https://gme-infotech.com>).

In SM2, the capabilities of the GM MDI dealer device of the first version (blue) are fully realized (and available in J2534 mode): CAN bus pins: **1 (Single Wire), 3-11 (Medium Speed), 6-14 (High Speed CAN) , K-lines on pins 1, 8, 9, 7, 12, 13**. This set gives access to almost all available systems of GM cars.

The second-generation dealer's device GM MDI-2 additionally has a CAN bus on 12-13 pins (steering wheel position sensor and others) of the OBDII connector - this bus is supported in the SM2-PRO adapter.

5.5. Nissan Consult 3+

This software was not originally designed to work with J2534 adapters, however, by editing the configuration file, it is possible to run it, but with significant limitations:

- A lot of functionality (data reading, programming) is implemented in the firmware of the original VI2 adapter, which goes far beyond the scope of J2534. The maximum that can be achieved is reading codes, identification and activation mode (data reading is available in activation mode), various adaptations, etc. are possible, there will be no reading of variables.
- The program will only see the state of the Ignition switch status Emulator through the native device VI2. **The SM2 J2534 driver provides an ignition switch [status emulator](#) for this program.**
- When the connection with the adapter is disconnected, Consult does not try to open the connection again, and will simply display a communication error with the computer or simply hang. Consult should be restarted in this case.

- Interrogation of blocks and reading of VIN comes with significant delays (compared to the original device).
- The program is unstable, freezes are possible.

Configuring Consult 3+ to work through SM2:

Tested on versions 46.11, 64.11, 65.10:

1) You do not need to edit anything in the register of the operating system

2) In C: \ CONSULT-III_plus \ System \ Application \ ApplicationData \ CommonSetting \ DiagnosticTool.ini you need to add exactly two lines with the name of the adapter (see the figure below):

USB connection:

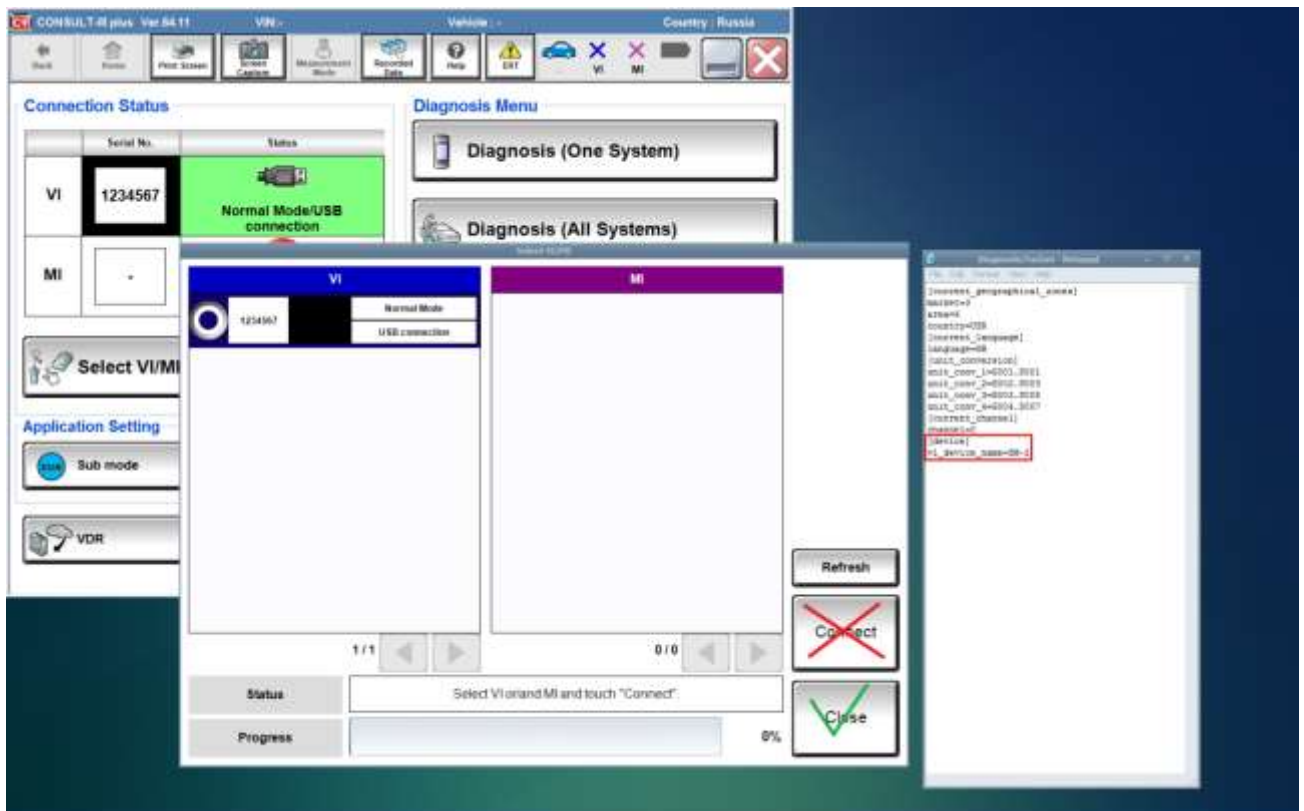
```
[device]
vi_device_name=SM2 USB
```

Bluetooth connection (indicate adapter number instead of xxxxx):

```
[device]
vi_device_name=SM2 Bluetooth #Axxxxxx
```

3) While **starting**, Consult makes an attempt to communicate via the CAN bus. **it is necessary** to control that adapter is connected to the car or ECU (with a 120Ω resistor) with a working CAN bus, and the ignition switch is turned on. If the program does not see the working CAN bus, it will not show the adapter in the main window (see point 4).

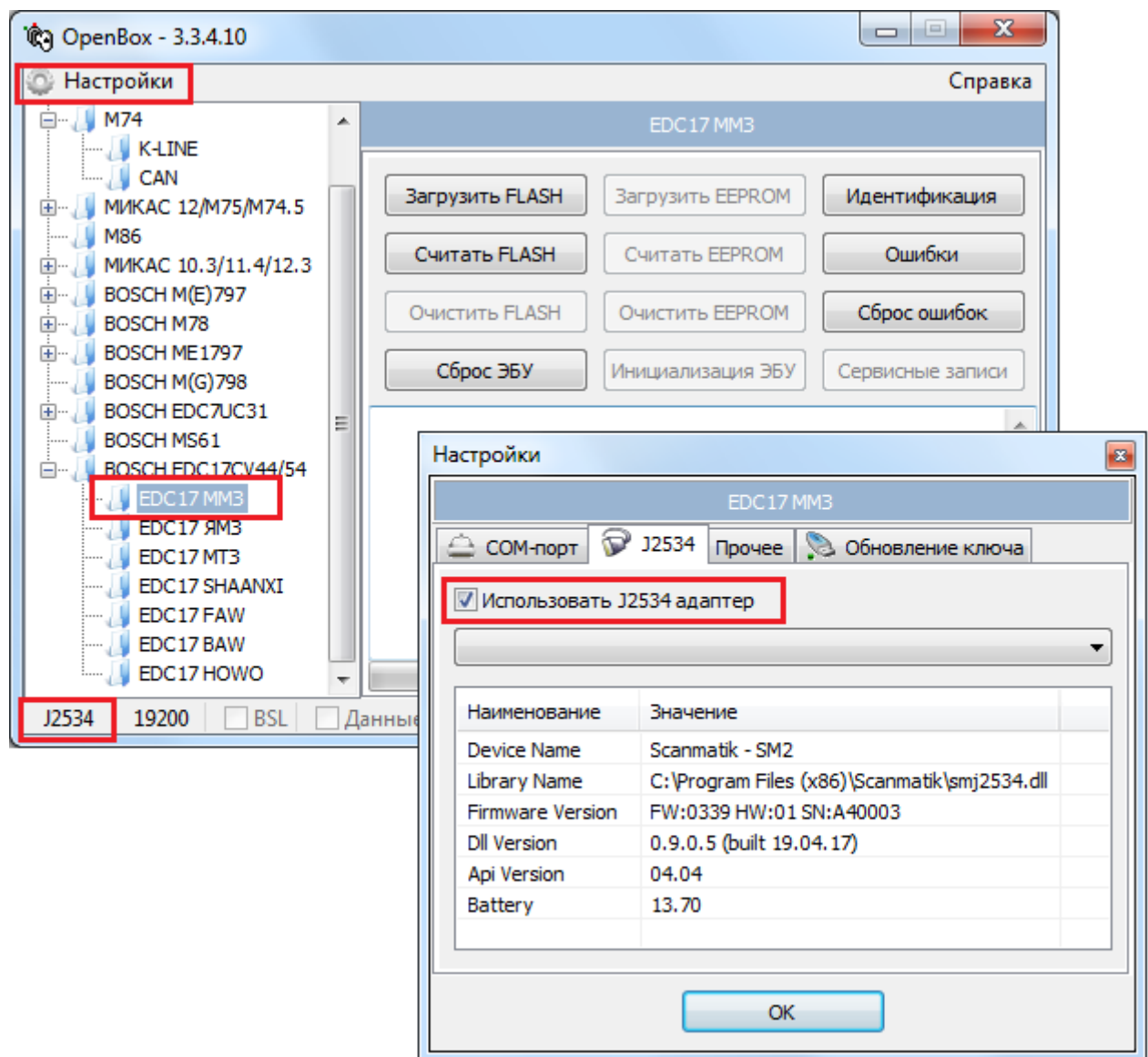
4) If Consult did not find the adapter immediately after starting (without a choice in the program settings!) (green zone on the picture), that means something is wrong with the CAN bus. Go to the adapter selection menu, and if the adapter appears there - select it and click "Close" (do not click "Connect"!!). If it is not there, then close Consult, and repeat from point 3.



Based on all previous problems (and taking into account the number of potential problems and questions in our direction), testing and fitting under Consult is beyond the scope of J2534 standards and is currently postponed.

5.6. OpenBox

Some program modules (like M74 KLINE) operate on the K-line only through a simple K-line adapter for the COM port. Others (like EDC17) allow you to choose the method of connection on the K-line (COM or J2534). To choose the method you need the following actions: after selecting each module, go to "Settings" and check the "Use J2534 adapter" checkbox in the "J2534" tab. If this option is not available, then your module will not work on K-lines through the J2534 adapter. Please see the picture below:



2.

In the lower left corner of the main program window you can see the type of the selected connection (COM port or J2534).

5.7. ODIS Service

Older cars with the K-line and the KW1281 protocol work correctly only when connected via USB due to the strict restrictions on time intervals.

When connected via **any adapter in J2534 mode**, the program will not see the status of the ignition switch. The SM2 J2534 driver implements a manual [ignition switch status emulator](#).

5.8. PCMFash

IMPORTANT! Due to the SM2 adapter being unable to supply programming voltage, the following modules / ECUs **will not work**: **Mitsubishi K-Line, Honda (all), Ford PWM / USA, Subaru with UJ / Hitachi processors.**

SM2-PRO adapters work with this program without any restrictions.

The following modules and blocks were successfully tested directly on the testing table:

Chevrolet (Epica SIM2K-D160), Ford Mondeo 4 / Galaxy / S-Max (ESU312, ESU412), Nissan Almera Classic K-Line (SH7055), Kia / Hyundai SIMK / SIM2K (all blocks), Mitsubishi CAN-bus (ASX 2014, 1.6 MH8106), Toyota / Lexus / Hino / Scion (several CAN and K-Line units with 76F00XX processors), VAG K-line (Marelli 7GV, Simos 3.3A), VAZ / UAZ / China (ME17.9.7 VAZ, UAZ), Denso SH705X Bootloader (Suzuki SX4).

5.9. Toyota Techstream

This software is fully supported, tests were carried out on a large number of vehicles, many corrections were made at the testing stage of the J2534 driver to achieve maximum speed and correct operation. This software has proved to be the most demanding for the correct implementation of the J2534 API.

The following are some of the Techstream flaws found during testing. The cases considered **are not related** to the SM-2 adapter, and appear on any J2534 adapter. It is also possible that in later versions of the program, these shortcomings will be eliminated.

IMPORTANT! Always choose the right market (USA, Europe, Japan, etc.), since the same model (for example, LEXUS GS300 '99) can use different protocols depending on the market. While establishing a connection, the program should automatically recognize at least the engine type / model code. If this does not happen, then the chosen market is probably the wrong one.

5.9.1. Lost connection with adapter or car

When the “**adapter-car**” or “**adapter-computer**” connection is interrupted, the program always displays a message indicating that the connection “**with the car**” is interrupted (code 0xA1050304 or 0xA1050308), which is misleading, especially when working via Bluetooth. If the “**adapter-computer**” connection is broken, the program will not restore the connection when the following message appears:



Therefore, when an error message appears with the code 0xA1050304 / 0xA1040308 on the screen, after communication with the unit has already been successfully established, proceed as follows:

- 1) Check the connection of the adapter to the diagnostic block, the LED should light green.
- 2) Check if the ignition of the vehicle is on;
- 3) Press the **“Retry”** button (try again);
- 4) If the message appears again, but steps 1 and 2 are fulfilled, it indicates that there was a failure in the connection **“adapter-computer”** in this case you should:
- 5) Press the **“Abort”** button and exit to the **“System Selection Menu”**;
- 6) Select the desired system again - only in this case the program will try to restore communication with the adapter.

5.9.2. Slow data refresh in DataStream

If during the viewing of variables in the DataStream mode there was a break in communication with the control unit (window with the code 0xA1050304 or 0xA1050308) and it was successfully set again by pressing the **“Retry”** button, the program switches to the “slow” mode of polling variables (the update interval increases significantly up to 4000..8000ms). For the program to use the “quick” poll mode again, you need to go to the main menu (**“Main Menu”**) and re-establish communication with the car (**“Connect to vehicle”**).

NOTE. Techstream does not use the “fast” variable polling mode on all vehicles. Any pattern was not found, it depends on the firmware of the unit. Therefore, on some cars, the update interval for a complete data list of 4000..5000ms is considered normal (LEXUS GS300 '99, RX300 '04). In this case, select fewer variables to view.

5.9.3. Hang in “Utility - AF / O2 Sensor Operation”

If you enter this mode after a DataStream, the program often freezes (with a running bar). Use this utility immediately after communication with the control unit has been established (from the mode of viewing error codes).

5.9.4. Hanging in DataStream when working with body electronics

When trying to view variable blocks on body electronics blocks, a program may freeze (with an ever-running strip) if the control unit is to output data from slave systems and sensors (for example, a button module via LIN bus), but there is no connection with them (open circuit, etc.).

5.10. Xentry/DAS Pass Thru

Opportunities:

- Full support for vehicles with CAN bus (Xentry, DAS) - all systems.
- [Ignition switch status emulator](#)
- For older cars with the K-line (MB-DAS), a non-standard function of automatically connecting the required leg on the OBD-16 block is implemented, which allows you to diagnose most control units (as a rule, the transmission ECU will not be available). This is a non-standard feature of CM2, it is included as desired in the [configurator](#). If this option is disabled, then the MB-DAS program will only see the ECU with the engine on the 7th leg.
- Cars that do not have an OBD-16 connector are not supported by DAS / Xentry Passhtru software.

IMPORTANT! It is not recommended to use this software without an official subscription (or access to the Star Diagnosis dealer), as sooner or later you will encounter a situation where the program will require online access to unlock or code the block, even after the most “harmless” operations.

IMPORTANT! On older models without a CAN bus on the diagnostic connector (or a motorist on the K-line), block encodings can be hardened while performing encoding functions, nozzle shutdown (CDI), etc. This is due to poor implementation of the KWP2000 protocol in the DAS program itself. Such procedures should not be carried out without Star Diagnosis at hand. We have debugged several cars (W203, W210, W211) and fixed DAS behavior by adding “crutches” to the J2534 driver, but this is not a complete list of models on which an ambush is possible.

[The Ignition switch status Emulator](#) will be available **after** interrogating the control units.

6. Summary tables of tested programs

According to standart J2534

Programm	Version	Protocols	Limitations
Chrysler flash application dealer software, Chrysler concern car programming with 96 m.y. https://www.techauthority.com	online	SCI, ISO9141, CAN	SM2: Only cars with a CAN bus are supported (as most cars before 2005 require supply voltage programming). SM2-PRO: no limits
Combiloader ECU programming of different brands http://almisoft.ru	2.16.6351	ISO9141, ISO14230, CAN	SM2: Full support for modules with the suffix "J2534", for K-line operation at maximum speed completion of adapter is required . SM2-PRO: no limits [!] Modules requiring GPT connection via Dialink are not supported.
Chiploader ECU programming of different brands http://chipsoft.com.ua	2.28.0	ISO9141, ISO14230, CAN	SM2: Full support for modules with the suffix "J2534", for K-line operation at maximum speed completion of adapter is required . SM2-PRO: no limits [!] Modules requiring GPT connection via Dialink are not supported.
ECU Flasher (auto-bk) ECU programming of different brands http://ecuflash.ru	2.3.0.b	ISO9141, ISO14230, CAN	SM2: restrictions on blocks requiring programming voltage. SM2-PRO: no limits
Ford Module Programming Tool dealer software, Ford car programming https://www.motorcraftservice.com	98	ISO1941, J1850PWM, CAN	SM2: only cars with CAN bus, as most cars before 2005 require supply voltage programming. SM2-PRO: no limits
Forscan Ford car diagnostics http://forscan.org	2.3.9 beta	ISO1941, KWP2000, J1850PWM,CAN	Full support, see work features

GM GDS-2/SPS dealer software, diagnostics and programming of GM cars (Chevrolet, Opel, etc.) https://gme-infotech.com	v2017.05	GM_UART, ISO9141, CAN/ISO15765 (1, 6-14, 3-11)	SM2: full support except peripheral units with CAN-12-13, see GM GDS-2/SPS . SM2-PRO: no limits
Hino Diagnostic Explorer 150 (Hino DX2) dealer software for the diagnosis and programming of Hino trucks. https://hino.nexiq.com	1.18	J2534-API 2002 CAN, ISO9141, ISO14230,ISO15765	Full support except Retro cars
HONDA HDS dealer software, car diagnostics of HONDA http://www.techinfo.honda-eu.com https://techinfo.honda.com	3.017	ISO1941, HONDA DIAG-H, CAN, ground fault of the 9th OBD-II pin	Full support (including peripheral systems on the 14th or 1st pin and SCS mode).
Jaguar/Land Rover SDD dealer software, diagnostics and programming of cars Jaguar, Landrover https://topix.landrover.jlrext.com	145, 149	CAN/ISO15765 (6-14, 3-11)	SM2: limited compatibility. The general definition (initial test) of systems on CAN buses does not work correctly, since the program tries to open two CAN channels at the same time on 6-14 and 3-11 pims. Separate diagnostics of the systems s work flawlessly. SM2-PRO: testing in progress
MDFLASHER IMMO OFF, SRS Crash Clear, mileage adjustment on different brands and everything related to it https://mdflasher.ru		CAN/ISO9141	Full compatibility
MMC Flasher (Bruce-Willis) ECU programming of different brands http://mmcflash.ru	10.0	ISO9141, KWP2000, CAN	SM2: Tested with ECU Lancer 5 MH7201F, Ford ESU-131 Visteon, Suzuki Denso SH705X. Programming voltage can be applied manually. SM2-PRO: no limits

Nissan Consult 3+ dealer software, diagnostics and programming of Nissan cars https://www.nissan-techinfo.com	71.40, 65.10, 64.11, 46.11	ISO9141, KWP2000, CAN +ignition switch status emulator	The software is not declared for working with J2534 adapters. However by editing the configuration file it is possible to run it, but with significant limitations, see Nissan Consult 3+
ODIS Service dealer software, diagnostics and programming of VAG concern vehicles https://erwin.volkswagen.de https://erwin.audi.com https://erwin.seat.com https://erwin.skoda-auto.cz	4.3.3	ISO9141, CAN +ignition switch status emulator	There are some work features
OpenBox ECU programming of different brands http://diantel.ru	3.3.4.10	KWP2000, CAN	Full support. For work with some modules on the K-line, a simple K-line adapter for COM port is required. There are some work features
PCMFlash ECU programming of different brands http://pcmflash.ru	1.1.86	ISO9141, CAN	SM2-PRO: Full support. SM2: There are restrictions on the blocks requiring the supply of programming voltage, see. PCMFlash For K-line operation at maximum speed completion of adapter is required.
Toyota Techstream Dealer software, diagnostics and programming of Toyota cars https://techinfo.toyota.com https://www.toyota-tech.eu https://www.lexus-tech.eu	13.10.019 12.xx 10.xx	J1850VPW, ISO9141, KWP2000, CAN	Full support, see work features
Volvo Vida dealer software, Volvo car diagnostics https://www.volvotechinfo.com	2015	ISO9141, KWP2000, CAN	Testing in progress

Xentry/DAS Pass Thru dealer software, Mercedes-Benz car diagnostics http://service-parts.mercedes-benz.com	05.2016	J2534: ISO9141, CAN, +ignition switch status emulator +K-line multiplexer	Full support for cars with CAN bus on the diagnostic block and most cars with K- line (multiplexer). See work features!
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According to standard RP1210

Программа	Версия	Протоколы	Ограничения
Allison DOC Allison Transmission Diagnostic Software https://allisonstore.noregon.com	2017	RP1210: CAN, ISO9141, ISO15765, J1939	Full support, there are comments on settings
Cummins INSITE dealer software for the diagnosis and programming of systems by Cummins https://insite.cummins.com	8.4 8.3 7.6.240 SP5	RP1210: CAN, ISO15765, J1939, J1708	Full support
Cummins Calterm III dealer software for editing calibrations, writing and reading firmware from Cummins systems.	3.2.0 3.4 3.8.1	RP1210: CAN, ISO15765, J1939, J1708	Full support
Case New Holland EST dealer software for diagnostics and programming of CNH equipment https://www.balticdiag.com/truck-diagnostic-tool/item/cnh-electronic-service-tool-dpa5	8.6	RP1210 J1939, J1708	This software does not use the RP1210 standard. Only works with the special version of the DPA5 adapter.
CAT Electronic Technician (CAT ET) Caterpillar dealer diagnostic and programming software https://www.michigancat.com/online-tools/cat-electronic-technician-et/	2018	RP1210 J1939, J1708	Testing in progress
Detroit DDDL Dealer software for diagnostics and programming of Detroit Diesel systems https://ddcsn-ddc.freightliner.com	6.45, 8	RP1210 J1939, J1708	Testing in progress
Eaton Service Ranger Dealer software for diagnostics of automatic transmission systems by Eaton http://www.eaton.com/Eaton/ProductsServices/Vehicle/tools/serviceranger/index.htm	3, 4	RP1210 J1939, J1708	Testing in progress
JCB Service Master 4 Dealer software for the diagnosis of JCB technology https://business.jcb.com/irj/portal	1.77.1	RP1210 J1939, J1708	Testing in progress

Noregon JPRO The program for the general diagnosis of trucks of the North American market. No particular interest for Russian market https://www.noregon.com/jpro	2018	RP1210: J1939, J1708	Full support
Volvo Premium Tech Tool Dealer software for diagnostics and programming of Volvo trucks http://www.premiumtechtool.com	1.X.X 2.6.70	RP1210: ISO15765, CAN, J1939, J1708	Starting with versions 2.x.x, there are problems with support of the RP1210 by PTT program from version to version. Not recommended for use.
Wabco Toolbox Wabco's ABS diagnostic software suite for trucks in the North American market.	12	RP1210: J1939, CAN, J1708	Full support

7. Specifications (in comparison)

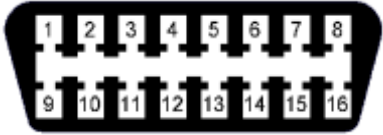
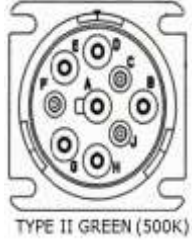
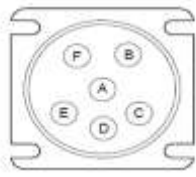
Below are the implemented functions of the SM2 adapter, in comparison with popular devices.

Parameter	Scanmatik SM2	Scanmatik SM2-PRO	Drewtech Cardaq Plus-2	DGTech DPA-5	Tactrix Openport
Connection type	USB/Bluetooth	USB/Bluetooth	USB/Bluetooth	USB/Bluetooth	USB
USB galvanic isolation	No	Yes	No	No	No
Supported Standards	J2534, RP1210C	J2534, RP1210C	J2534, RP1210B	J2534, RP1210C	J2534
Work with the onboard power supply 24V	Yes	Yes	Yes	Yes	No
programming voltage (on the pins of the OBD2 connector)	No	6, 8, 9, 11, 12, 13, 14	6, 9, 11, 12, 13, 14	No	1, 9, 11, 12, 13
programming voltage (AUX)	No	Yes	Yes	No	Yes
Shorting the pins to the ground	Yes	Yes	Yes	No	Yes
J1708	Yes	Yes	Yes	Yes	Her
CAN1 on pins 6-14 (OBD)	Yes	Yes	Yes	Yes	Yes
CAN2 on pins 3-11 (OBD)	Yes	Yes	Yes	Yes	No
CAN3 on pins 12-13 (OBD)	No	Yes	Yes	No	No
SWCAN on pin 1	Yes	Yes	Yes	No	No
K/L LINE, on pins	1, 2, 3, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15	1, 2, 3, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15	1, 7, 8, 12, 13, 15	7(K)-15(L)	7(K)-15(L)
J1850 VPW/PWM	Yes	Yes	Yes	Only VPW	No
Chrysler SCI	No	Yes	Yes	No	No
Multiplexer for MB-DAS	Yes	Yes	No	No	No
Ignition switch modes emulation ODIS, MB-DAS	Yes	Yes	No	No	No

Protocol Support RP1210C	CAN, J1939, J1708, KWP2000, ISO9141	CAN, J1939, J1708, KWP2000, ISO9141	CAN, J1939, J1708	CAN, J1939, J1708, KWP2000, ISO9141	No
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8. Pinout of truck connectors

In August 2018 The OBD-16 -> Deutch-9 + 6 adapter went on sale, which is suitable for most trucks working with the RP1210 standard. Use this information to connect without an adapter.

			
4,5	A	E	GND
16	B	C	Power
6	C	D	CAN1/J1939 Hi
14	D	F	CAN1/J1939 Lo
7	E	-	CAN1 Shield/KLINE(CNH)
10	F	A	J1708 Hi
2	G	B	J1708 Lo
3	H	-	CAN2 Hi
11	J	-	CAN2 Lo/KLINE (PACCAR)

9. History of changes

Version 1.0.0.31 (from 15/12/20)

- added CAN 95200 3-11 speed for GM GDS releases 2020. (found on Captiva/Antara)

Version 1.0.0.18 (from 04/10/19)

- Very slow connection or no RP1210 connection while connected via Bluetooth
- PCMFash 71/53 modules did not work while “alternative” GPT outputs (7-13) were selected

Version 1.0.0.14 (from 08.25.18)

- Based on the results of testing the Volvo PTT program, some changes were made to the RP1210 driver
- Other changes, optimization

Version 1.0.0.13 (from 07.25.18)

- Reworked organization of connection to devices via J2534

- Implemented full support for standard RP1210C
- Implemented multiplexer for the MB DAS program
- Implemented support for API J2534-0202 for the Hino DX2 program
- Other changes

Version 1.0.0.8 (dated 06.03.18)

- Fixed a mistake made in 1.0.0.7 that made it impossible to diagnose certain blocks on the CAN bus in Toyota TechStream (detected during adaptation of the Auris E150 manual transmission)
- ignition switch status emulator is modified for the latest versions of ODIS S4.3.3 / E8.1.3

Version 1.0.0.7 (from 01/14/18)

- Some optimization of the work speed on channels ISO15765 / SW_ISO15765

Version 1.0.0.6 (from 01/05/18)

- CAN buses become able to work at non-standard speeds (currently used in MDFlasher software)
- modified ignition switch status emulator for ODIS Service 4.2.3 / Engineering 7.2.2

Version 1.0.0.5 (from 10.10.17)

- CAN buses 6-14 and 3-11 are able to work at speed 1 Mbps.

Version 1.0.0.4 (from 08.27.17)

- Implemented ignition switch mode emulators for NISSAN CONSULT3 +, VAG ODIS, MB DAS programs.

Version 1.0.0.0 (dated 06/25/17)

- Some Bluetooth corrections with Widcomm 5.6 driver
- First public release after testing

Version 0.9.1.0 beta (or 17.06.17)

- Fixed a bug in the implementation of the ISO1576 channel, according to reviews on Toyota Techstream while working with body electronics (there is no communication or lack of DataStream in Smart Key, BCM, etc.). Caught and debugged at VITZ [JP] 2011.

Version 0.9.0.9 beta (from 13.06.17)

- A flaw in the implementation of the ISO14230 channel was revealed, according to reviews on Toyota Techstream. The program did not establish a connection (or freeze during connection) with some cars until ~ 2006. Caught and debugged on the GS300 [EU], RX300 [EU], AVESIS 1CD-FTV [EU].
- Fixed a bug in the implementation of the CAN channel, which made it impossible to program Denso units with SH705X processors (detected on Suzuki SX4, PCMFlash, MMC Flasher programs).
- The driver displays a notification in the taskbar (if enabled in the configuration) when there is an error connecting to the adapter in the following cases:

- the adapter is used by another application;

- USB cable is connected to the adapter, but the connection is configured via Bluetooth.

- In the Forscan program, an incorrect implementation of the exchange according to ISO9141 / FORD when working through J2435 was detected. As a result, the program does not establish communication with the blocks on the ISO bus (K-Line). Forscan developers have been notified and fix this problem, but for compatibility with the current version (2.3.9 beta), a “patch” has been made in the driver. Detected on a Ford Escape 2002 car (there was no connection with ABS, SRS).

- Other changes, optimization

Version 0.9.0.8 beta (from 05.25.17)

- The HONDA DIAG-H protocol has been added, used to diagnose cars up to ~ 2005 with systems on the 1st or 14th contacts of OBD-II, or on a car with 3 or 5 contact blocks.

- Added the ability to close contacts 9, 12, 15 of the OBD-II block to ground, in particular, this is necessary to enable SCS mode in the Honda HDS program.

Version 0.9.0.7 beta (from 05/18/17)

- A thorough testing of Toyota Techstream software was carried out at the control units 1997-2016 for all submitted reviews, including right-hand drive vehicles. Several bottlenecks in the implementation of the KWP2000 and CAN / ISO15765 protocols have been fixed due to which when working with this program there were constant disconnections from the control units and slow data update.

- M74 CAN modules in OpenBox and Combiloader loaders (fixed in module version 1.7) use a non-standard implementation of the CAN channel of the OpenPort adapter and as a result worked only with this adapter (and Dialink). Implemented emulation of the OpenPort adapter features for these loaders (and only for them).

- Other changes, optimization.

Version 0.9.0.3 beta (from 04/18/17)

- Fixed a bug in the CAN message manager in the adapter firmware. It was revealed when reading the Delphi MT60 blocks (it ended with an error at an arbitrary moment) and the VAZ M74.5 CAN (incorrect answer) with the Combiloader program. The fix applies to all programs!

- The programs of Combiloader, PCMFlash and others use too high K-line exchange rates (up to 150 kbit / s) due to which there was no connection when choosing a speed of more than 57.6 kbit / s (detected on the VAZ ME17.9.7 block). [A replacement of the K-line pull-up resistor from 1KΩ to 510 Ohm is proposed.](#)

- The message sending / receiving algorithm has been reworked, due to which the modules were very slow (read / write) in Combiloader, PCMFlash programs with CAN bus connection (detected on VAZ ME17.9.7, including BSL mode). The speed of Chiploader and PCMFlash through SM-2 is verified with Cardaq-2 Plus, Dialink and OpenPort2 adapters.

- The installer wrote the wrong path to the SM-2 configurator program in the registry.

Version 0.9.0.2 beta (from 04/07/17)

- First edition.

10. Disclaimer

DRIVER J2534 FOR DEVICE SM-2 (THE "SOFTWARE") IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. UNDER NO CIRCUMSTANCES, THE AUTHORS OR THE RIGHTS OWNERS WILL BE RESPONSIBLE FOR ANY CLAIMS, DAMAGES, OR ANY WRONGDOINGS RESULTING FROM THE CONTRACT EXECUTION, SOFTWARE USE OR ANY OTHER DIRECT OR INDIRECT OPERATIONS WITH SOFTWARE.