RENAULT SCR testing module

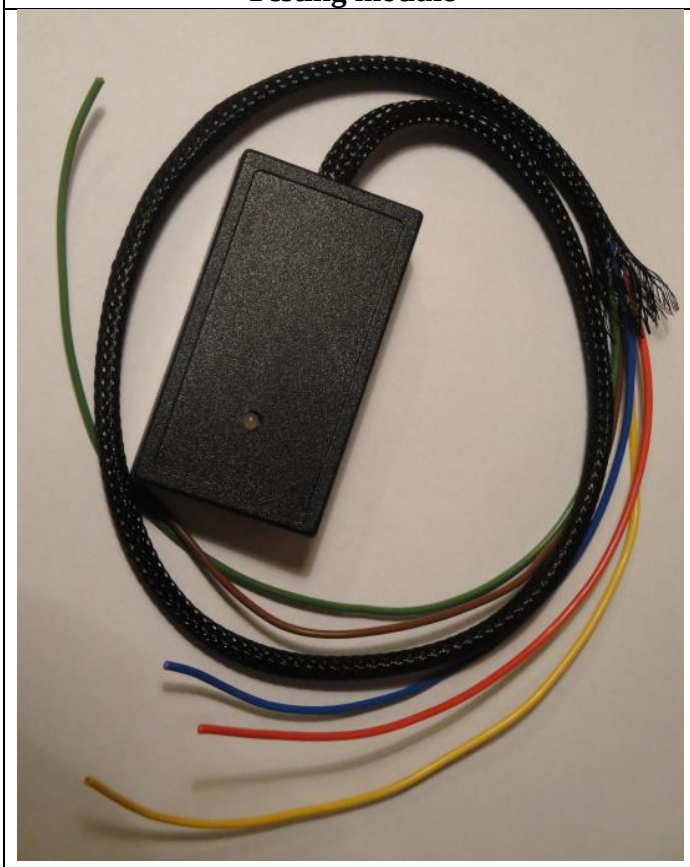
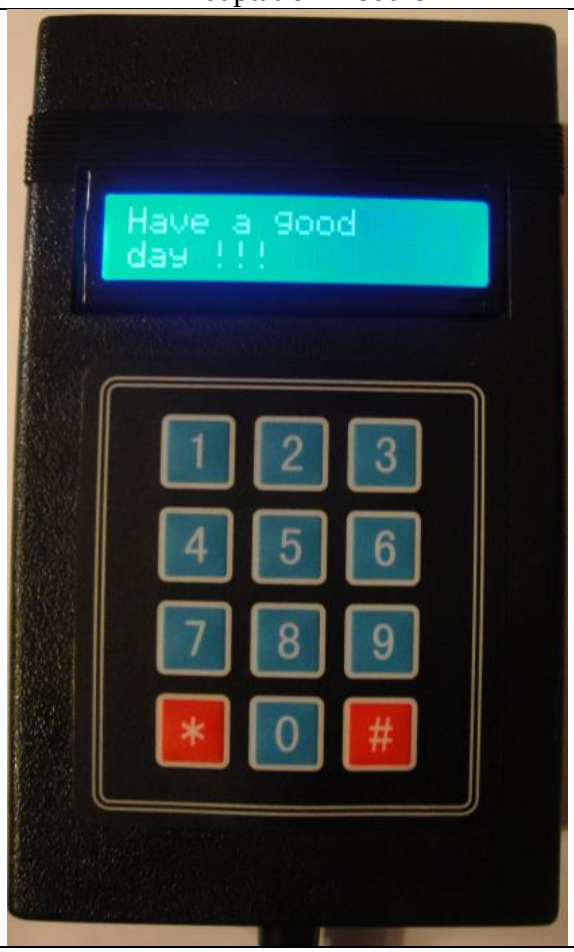
Brief module description

We design this module to test the Renault SCR system (subsequently SCR) and its components. Using this module, you can test different SCR components, such as the NOX sensor or the SCR ECU itself. It also saves time and space, as you no longer have to store various sensors and ECU's for testing.

Please note!!! We design this module purely for testing the SCR system. Although prolonged use of this module has no negative effect on your vehicle. Be advised that in some countries law might prohibit misuse and/or prolonged use of this module. The buyer carries full responsibility for the use of this product.

The testing module comes in three types of models: MINI; MIDI; MAXI.

- **MINI model package contents:** NOX sensor testing device (subsequently – testing module)
- **MIDI model package contents:** NOX sensor and SCR ECU testing device (subsequently – testing module)
- **MAXI model package contents:** NOX sensor and SCR ECU testing device + device to scan and enter data manually, codes (subsequently — adaptation device)

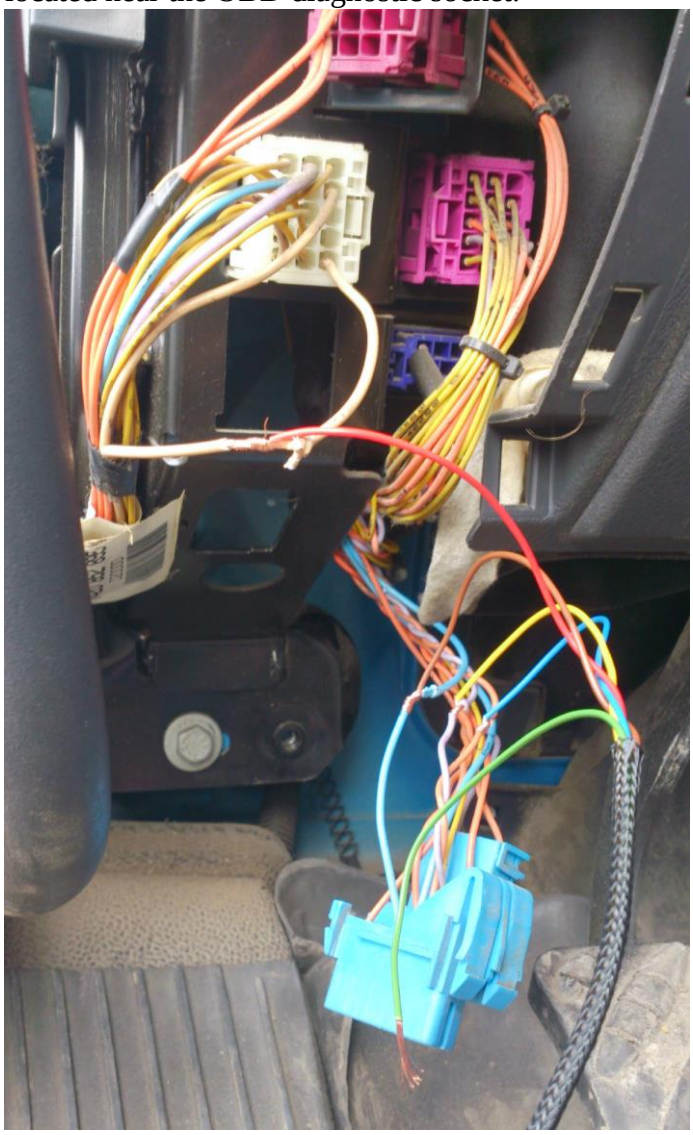
Testing module	Adaptation module
	

Setting up and using the module
MINI, MIDI, MAXI models:

Setting up and using the testing modules is identical for all models. Each model has five different colour wires, which have to be connected according to this table

Testing module	Vehicle	Description
Red	Beige (not always) not in OBD connector	Power supply that is on after switching the ignition on. Voltage is about 20-30V
Brown	Blue	Ground
Yellow	Purple	CAN-L
Blue	Orange	CAN-H
Green	—	Determines the modules current mode

This module can be installed anywhere in the vehicle were CAN data wires can be located, positive and negatives wires will also be required. All of these wires are conveniently located near the OBD diagnostic socket.



The NOX sensor ant the SCR ECU are specifically coded for each vehicle, to aid the adaptation the testing module is equipped with a coding function and has to be adapted to every vehicle individually.

Adapting the testing module

These testing modules are equipped with an automatic adaptation function. Although MAXI models have an additional coding device, which is crucial when diagnosing serious malfunctions, such as complete failure of the NOX sensor or the SCR ECU.

Carrying out the automatic adaptation

In order to carry out the automatic adaptation you must connect the following wires: red, brown, yellow, blue. You must connect all those wires only then, when the **ignition is off**.

The automatic adaptation function will start when the green wire (which determines the modules function) you will connect to the vehicles positive cable. When you will connect everything according this manual, switch the ignition on. Do not disconnect the NOX sensor and the SCR ECU!

You can watch over the adaptation process using the bi-coloured LED indicator, which is located on the module.

Step 1:

Red indicator light is on for about 2 seconds. This is "handshaking" time to engage various processes in the vehicle and in the module.

Step 2:

Indicator light flashes continuously with 0.2 sec. intervals. NOX sensor and SCR ECU initialization has begun. This lasts for about 3-4 seconds.

If this continues for 10-20 sec, either this indicates a complete failure of the NOX sensor and/or the SCR ECU, or an unforeseen problem occurred. To ensure that no errors occurred while connecting the wires, the connections have to checked or redone. If the outcome is the same then you should contact a consultant.

Step 3:

The indicator light flashes green continuously with 0.2 sec intervals. This indicates a successful NOX sensor and SCR ECU initialization. Data transfer will start it lasts up to 30 sec.

If it last longer than 1-2 minutes, either this means a complete failure of the NOX sensor and/or the SCR ECU, or an unforeseen problem occurred. To ensure that no errors occurred while connecting the wires, the connections have to checked or redone. If the outcome is the same then you should contact a consultant.

Step 4:

A green LED light indicates a successful coding procedure. Switch the ignition off, disconnect the green wire form the positive wire, and connect it to the negative. This means that you switch the module from adaptation mode to working mode.

NOTE! Never leave the green wire disconnected. The device will still work, but due to some circumstances, it might become unstable. You must connect the green wire at all times either to the positive or to the negative wire, depending on the selected mode. During the adaptation – to the positive cable, during normal working mode – to the negative cable.

Step 5:

When you will connect the green wire to the negative cable, the device automatically will switch into normal working mode. The device indicates working mode by the LED light, which flashes green every second. Green light indicates that the module has been successfully coded and in working mode. If the LED flashes red light with 1 sec. intervals this indicates that the coding was, either not successful or not carried out at all. This means that you must repeat everything from step 1.

Step 6:

Now you can carry out maintenance work and various tests; the initialization of the testing module is complete. You can also disconnect the NOX sensor and/or the SCR ECU by simply disconnecting fuses no.6 and no. 357 from the fuse block.
Note: do not leave the testing module and the original components connected for a long time.

Table: Possible LED light meanings

Flashing interval	Colour	Description	Result
Constantly on	Red	Lights up for <2 sec. after switching the ignition on. Various processes engaged.	Normal function.
Flashes for 0,2 sec	Red	Testing module and vehicle's initialization processes is on before the adaptation.	<10 sec. normal; >30 sec. repeat everything from step 1
Flashes for 0,2 sec	Green	Data transfer is in progress	<30 sec. normal >2 min repeat everything from step 1
Constantly on	Green	Adaptation complete	Disconnect the green wire from the positive lead and connect it to the negative lead.
Flashes for 1 sec	Red	Device is in working mode. Adaptation process not carried out or carried out not fully.	Repeat everything from step 1
Flashes for 1 sec	Green	Device in working mode, adaptation complete	Normal process
Flashes for 0,2 sec	Red/green	No communication with CAN	Check connections

Manual coding and data scanning device (subsequently – adaptation module) description.
Maxi model package has a manual coding device that you can use for testing also.
Adaptation module:

Adaptation module has a keyboard, which we use for data input and controlling the device itself, LCD display, on which the information is displayed and an OBD connector that is used to connect the vehicle to the module.
The adaptation module is designed to:

- To control the testing module and some SCR components
- Manually scan and enter coding data.

Adaptation module function's description
Keyboard perform the control and navigation of adaptation device:

	Use keys 0-9 to enter the adaptation code or any other digital data. Use key * to confirm the entered adaptation code. Use key # to enter the next menu item.

LCD messages descriptions:

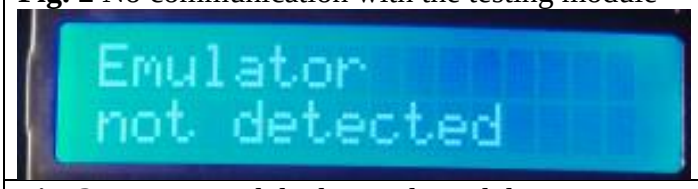
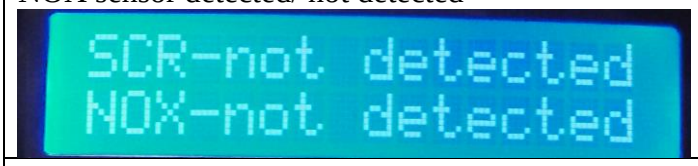
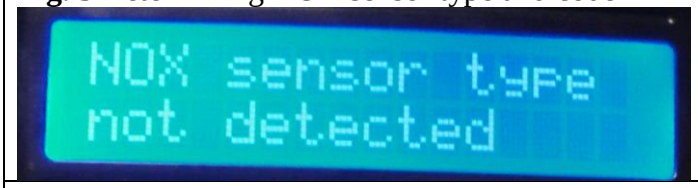
Messages displayed on the LCD	Result/ Description
Fig. 1 The modules software version is only shown during start up 	Displays the module's current software version on start-up. It is impossible to display the version during operation; a reboot is required to display the current version again.
Menu item no.1: **Fig. 2** No communication with the testing module 	
Fig. 3 Testing module detected, modules version is also displayed 	Version: X=1 MINI model (only NOX sensor test available) X=2 MIDI model (tests NOX sensor and SCR ECU) YY=version number
Menu item no.2: **Fig. 4** SCR ECU detected/not detected NOX sensor detected/ not detected 	If the adaptation was successful, both lines should read detected. This menu item is helpful when determining which items are working and which are not.
Menu item no. 3 **Fig. 5** Determining NOX sensor type and code 	NOX sensor is faulty or disconnected. If, at this point, the testing module is connected instead of the NOX sensor then it is either badly connected or not coded. In first case, check all connections and electrical supplies, in second case try recoding.
Fig. 6 	New type NOX sensor detected, sensor's code is also displayed.
Fig 7 Old type NOX sensor detected, code not available 	**Attention: After a successful adaptation instead of the old type NOX, sensor a new type sensor will be displayed.**

Fig. 8 Internal NOX sensor failure or faulty testing module coding 	In case of sensor failure, code cannot be scanned. In case of faulty coding, it has to be recoded, either manually or automatically. Note: if such data occurs on the original NOX sensor then automatic coding is not available. If you have previously saved the adaptation code, enter it manually.
Menu item 4 **Fig. 9** Testing module manual coding 	Fig. 9 shows that the user has entered the coding setup. In order to start manual coding enter **1; 5; 9;.**
Fig. 10 After entering the given numbers such screen should be seen 	
Fig. 11 Which in a few seconds will be changed into a screen where you must enter the adaptation code 	Using the keypad enter the code, then check it and press * to confirm. If you made a mistake while entering the code, you can press # to enter the menu again to re-enter the code.

	Please wait while the coding will be finished.
After entering the code manually, enter the 3rd menu item again to check if the coding was done correctly.	

Useful tips for using the MAXI module

1. **We advise to go over the entire fleet of vehicles to extract and save all the adaptation codes form every vehicle.** See menu item 3.
   This should be done so when the NOX sensor fails and automatic coding becomes impossible it is much easier to enter the code manually than to take every vehicle to a Renault dealer to have a new NOX sensor coded to fit the vehicle.
   Codes must be compared before and after the coding. If they do not match, the testing module must be recoded.
2. Attention!!! The old type NOX sensor will be shown as a new type NOX sensor after successful coding. The new code will also be shown, but it is not relevant.

Warning!!!

Do not pull out any fuses to disable the NOX sensor! Renault are made in a way that one fuse is hooked to a few functions. After pulling out the fuse, some functions might become absent. To bypass the system you will need to cut one of the wires. It is located in the fuse box, which is under the shield.

Third row of connectors, you need to pull out the purple connector. Figures below indicate the locations.

You have to disconnect the marked wire No.15 (purple) (which is connected to SCR system) in a way that you can connect it again in the future, if you need.

From this connector, which is connected next to catalyst NOX sensor need to disconnect (pull out) in a way that you can connect it again in the future, if you need wire which controls NOX sensor (blue wire No.4)