# Omega – NATS-2 (v1.0)

The module for programmer Omega allows work with immobilizers for Nissan NATS-2 using processors Motorola - 5WK4593, 5WK4640, 5WK46472, 5WK4825, 5WK48642.

To make the use of it more comfy there is a separate configuration file immo.cfg which can be found in the folder of programmer MTRK. It has in it the following:

```
GROUP=Nissan

CHIP=NATS-2 (Motorola),256,nats2.hpx
AREA=EEPROM,256,0100H
AREA=FULL,8K,0000H,w
BAUDB=9600
BAUDC=9600
LOADER=OFF
```
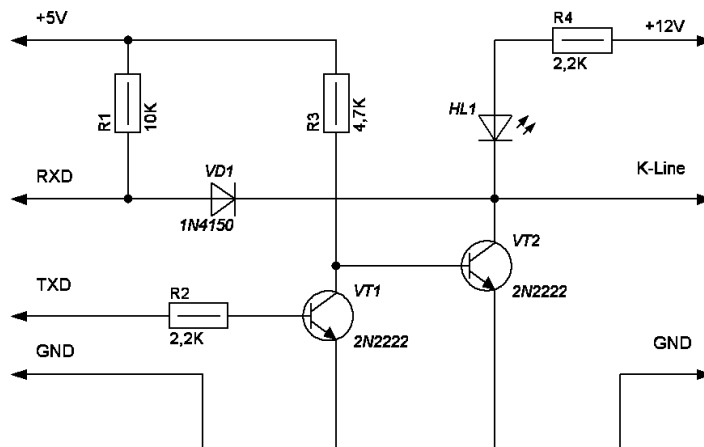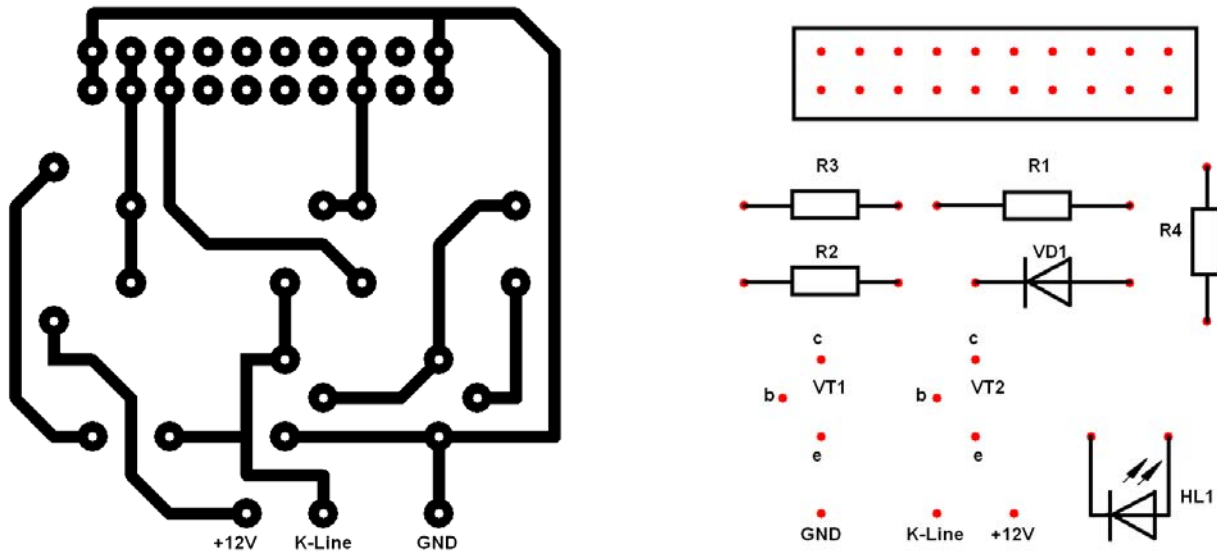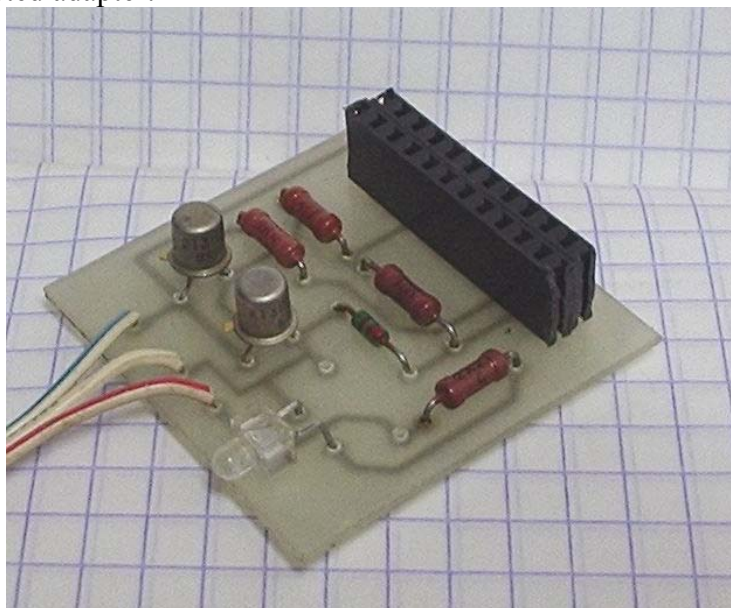
To connect to the system there is no need to wire up the chip of the immobilizer. The data transfer is made via adapter K-line. The given diagram can be used as such an interface, which then has to be connected to the MTRK adapter or directly to the Omega base block.



The diagram of a suggested adapter with the component layout:

Overall view of the completed adapter:



This device will provide a full access (read and write) to the EEPROM of the processor and will read RAM, ROM, Registers as described in Omega configuration file. Additionally there is a possibility to erase and automatically add new keys.

Reading, writing and modification of the EEPROM is done in a usual way.

It's strongly suggested to begin the work by reading and saving an EEPROM dump. Only after that, continue with your work as needed. The EEPROM dump contains synchronization code with the engine ECU and if its content is damaged, immobilizer will not unblock the ECU. Review of the module additional features.

The work with the immobilizer can in laboratory conditions inside the car. If it is only needed to read/write the EEPROM a signal amplifier block is not needed. Although if making new keys is included an amplifier is required below a schematic of how immobilizer and amplifier have to be connected.
That is how the above described look like.
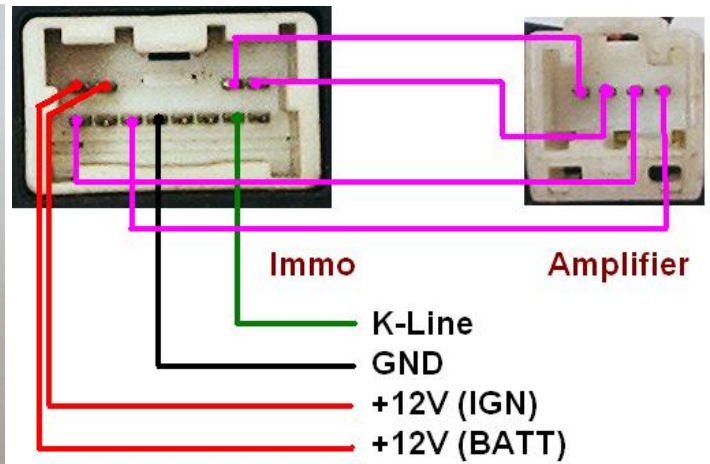
Review of the module additional features.

"Immo Version" – will provide immobilizer software version.

"Add Key" –  – registers new keys to the system (maximum of four). When initiating this function the system will go in mode for registering keys, even if at that moment there is no key in the amplifier's coil. After that put the immo and the amplifier inside the car , insert a  new key and turn on -> off ignition. When the system is started with a previously prepared key the system will turn off the automatic registration of the key. If it is needed to do this procedure in lab conditions i.e. out of the car when u change the keys in the antenna the button "Add Key"  has to be pressed. Also like when it is inside the car when this function is selected with a previously registered key the automatic registration of keys cancels.

"Delete All Key" –  – will delete all the key information from the EEPROM. If some of the keys previously registered in the system need to be reused, "Add Key" procedure must be executed after erasing all the key information from the EEPROM.

Transponders for this type of immobilizers can be prepared with Gambit using the dump form the EEPROM. In this case the transponder is ready to be used in the car without need to register it.