

OPEL / GM immo emulator

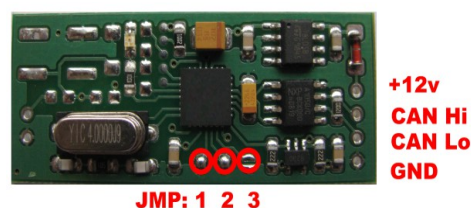
CAN, 500 kB

Usage:

OPEL cars , CAN version. Not Plug&Play, must store SYNC before use. To be clear, SYNC has nothing related to PIN code or VIN number. That's what is actually stored into IMMO / ECU to match each other and is used for communication between them. Because usually people deal with PIN codes only (SYNC exchange is hidden), it's a good idea to make a test stand - original immo (must have valid transponder) with known PIN code and SYNC and wiring loom with various ECU connectors. This allows to store this known SYNC into all emulators you use. Must simply perform "ECU replacement procedure" with immo on the bench using PIN code - alignment procedure copies PIN and SYNC from original immo to ECU.

Jumper (solder joint) settings:

- **JMP-1:** if **short**, SYNC read / write is prohibited.
- **JMP-2:** if **short** standalone mode is enabled, emulator acts as classic immo using all requests and responses. If **open** it sends and overbeats only authorization requests. Use this mode if there is a setup with original IMMO system on car.
- **JMP-3:** **open** for older systems with immo in CIM (*Zafira, Insignia* etc.). If **short** – later releases (*Astra J, Buick, Chevrolet* covered).



Configuration using MBcan:

- Power emulator from 12v power source, attach MBcan hardware, launch **CONFIGURATOR** software.
- JMP-1 must be OPEN for configuration,
- Enter and store SYNC (16 bytes) . If write is successful, LED on emulator board goes ON for about 1 second (long blink) – SYNC is accepted and stored.
- Place solder joint to short JMP-1. Emulator is ready for installation now.

How to store SYNC using CAN logger:

- To store SYNC must send 3 CAN frames, ID = 0x7FE, DLC = 8, 11-bit identifier. 1st DATA byte is a sequence number (00, 01, 02), remaining 7 bytes of data are SYNC. Example:

```
0x7FE 8 00 11 22 33 44 55 66 77
0x7FE 8 01 88 99 AA BB CC DD EE
0x7FE 8 02 FF AB 00 00 00 00 00
```

means you are storing SYNC **112233445566778899AABBCCDDEEFFAB**.

- Response from emulator looks similar, must see same data with ID 0x7FF -

```
0x7FF 8 00 11 22 33 44 55 66 77
0x7FF 8 01 88 99 AA BB CC DD EE
0x7FF 8 02 FF AB 00 00 00 00 00
```

If data match, SYNC is stored successfully.

- You can request actual SYNC from emulator, must send

```
0x7FE 8 FF 00 00 00 00 00 00 00
```

Emulator will respond as above, 3 frames with SYNC.

Installation:

Attach 4 wires according to workshop manuals / wiring diagrams: +12v IGN, GND and CAN Hi and Lo. For testing purposes you can connect emulator directly into OBD plug (pins 6 and 14, powertrain CAN).

LED on emulator board:

- **short blink** at power up, emulator is ready to authorize ECU.
- **long blink** - ECU request received, immo communicates. It doesn't mean ECU is actually authorized.
- **8 short blinks** – ERROR condition. At power up: SYNC not valid or emulator is blank.