

Abstract

Component Security in keys of the Megamos48 type

The modern immobilizers of the VAG-group vehicles have such conception as “Component Security” (CS). The CS is an array of 7 bytes length. Its role in a vehicle is to forbid a mixing of electronic units from different cars. In terms of the immobilizer the CS is a “password” that used in couple of the Motor Unit (ECU) and the immobilizer.

The protection scheme includes 3 components that share the CS, they are:

ECU

IMMO

KEY

The protection scheme allows the engine to start only in case when the CS is identical in all the three components.

Key and CS

The CS is a part of the Crypto Key and fills its upper area Word9-Word6.

ECU and CS

ECU uses the CS as a password. More modern ECUs contain only 6 bytes of the CS. In this case the CS should be extracted from another devices, for example it may be a dashboard.

IMMO and CS

The vehicle dashboard usually has a role of an immobilizer. The IMMO always contains all the 7 bytes of the CS.

Introduction

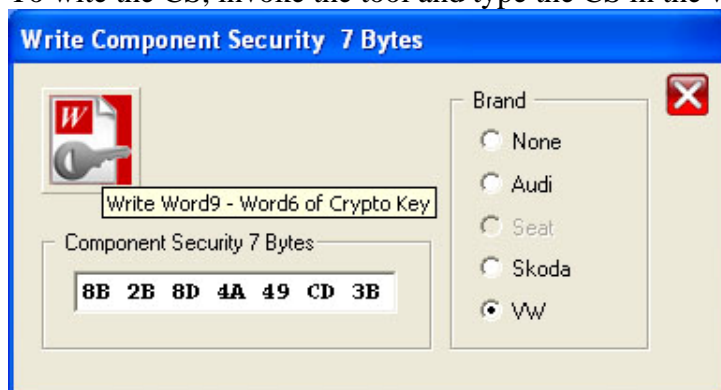
The tool “Write Component Security 7 Bytes” (Megamos 48 window) helps you to put the CS manually into a transponder. Let’s see an example of ECU BOSCH Motronic M7.

ECU dump, eeprom 95040:

```
00000000 1038 3010 039A FFFF FFFF FFFF FFFF FF5A .80.....Z
00000010 0501 0100 A8EC 0000 0000 69C1 00A5 95FC .....i.....
00000020 0501 0100 A8EC 0000 0000 69C1 00A5 94FC .....i.....
00000030 0401 7910 8B2B 8D4A 49CD 3B00 0100 90FC ..y..+.JI.;.....
00000040 0401 7910 8B2B 8D4A 49CD 3B00 0100 8FFC ..y..+.JI.;.....
00000050 0702 8802 D001 0500 2004 590F 0700 FFFD .....Y.....
00000060 0000 7C0D 2D0E 0000 8603 0100 0000 ACFE ..|.-.....
00000070 0504 0000 1C00 0005 0000 A740 0000 E8FE .....@.....
00000080 0504 0000 1C00 0005 0000 A740 0000 E8FE .....@.....
```

The CS has been marked in the blue color.

To write the CS, invoke the tool and type the CS in the window:



Select the vehicle brand and press the Write button. Temporary the Seat brand is unavailable.