## **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

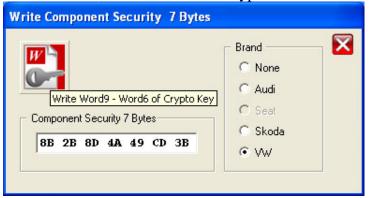
The tool "Write Component Security 7 Bytes" (Megamos 48 window) helps you to put the CS manually into a transponder. Let's see an example of ECU BOSCH Motronic M7.

## ECU dump, eeprom 95040:

0000000	1038	3010	039A	FFFF	FFFF	FFFF	FFFF	FF5A	.80z
0000010	0501	0100	A8EC	0000	0000	69C1	00A5	95FC	ii
00000020	0501	0100	A8EC	0000	0000	69C1	00A5	94FC	ii
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	
08000000	0504	0000	1C00	0005	0000	A740	0000	E8FE	

The CS has been marked in the blue color.

To wite 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.

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