MBkeyprog-2

USER MANUAL

We present to your view a hardware system MB Keyprog 2.

Its **main function** is to facilitate the programming of Mercedes "optical keys". Besides the program works independently with ECUs dumps, gear box etc.

Attention! These instructions don't claim to be completely up-to-date. The program is in constant updating and the newest changes might not be included in these instructions. In addition to these instructions we advise to use **Help** directory in the corresponding windows.

After you have connected the main unit from your set to USB port, you will need to install the drivers (included). The process of drivers installation is not described in this manual.

Run the program.

1. Operating bookmark W203_W220:908

MBkeyprog-2 v1.0	
MBkeyprog-2 v1.0 W203 W220:908 W210 W220:05X32 W211_220:912 ESL/K-line W203, W639, W215, W220: MC68HC908 Load Save ETL-64k.bin ESL/ESM Calculate FSL ESM Help W203 Repair ESL/ESM Help W220	The used keys. The blocked keys: Load Save KEY \circ - v.1 \circ - v.2 \circ - v.3 Load Save ECU Help All
	VIN P/N Calculate ECU Renew ECU Save Log File Clear Log File Stop

The program initially opens at W203_W220:908 bookmark. It means we work with the EIS, where processor MC68HC908AS60(AZ60) is installed. You can see the list of the cars where the EIS is based on this processor in the program window (encircled in red).

Below there is a view of the EIS processor.



Further there is a view of the EIS processor W215 and W220.



The processor dump which we marked as **CPU KEYS** should be considered a suitable programmer. At first you should unsolder the processor and read it with the programmer if it is necessary (depends on the programmer you use). If you use programmer **ETL**, then you have to tick the window in front of **ETL-64k.bin** inscription.

Press LOAD directory in the top left window and upload the previously read dump processor.

HBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line	
W203,W639,W215,W220: MC68HC908	The used keys. 🗌 🗆 Key-0
Load Save ETL-64k, bin ESL/ESM Calculate	The blocked keys. 🔽 Key-1
	Key-2
	Load Save KEY E Key-3
Repair ESL/ESM Help W220	0 - v.1 Key-4
	\sim
	<u> </u>
	Load Save Tour
EIS MC68HC908 EEprom is loaded:	
00100: D3 FF	Help
0020: 52 52 B3 BC 2A 02 OF DA 84 58 2C 08 DE 4A 45 57	
0030: 00 07 7B 48 40 90 34 74 C7 3C 3E 00 07 3D D0 ED	VIN
0040: DF 51 44 93 48 49 00 07 D6 D9 83 6B 03 C5 29 02	
0050: 90 00 07 42 5E 74 69 C6 91 9A F0 5E 00 07 D8 F7	27N
0060: BE CD 6E 14 93 54 C3 00 0F E6 F3 FC 84 C1 4F BE	Calculate ECU
0090, 21 p8 pp 08 72 62 5D 88 01 07 pp pp pp pp pp pp	
0090: FF FF FF FF 0F 7B 48 40 90 34 74 C7 3C 3E 00 0F	Renew ECU
00A0: 3D D0 ED DF 51 44 93 48 49 00 0F D6 D9 83 6B 03	
00B0: C5 29 02 90 00 OF 42 5E 74 69 C6 91 9A F0 5E 00	Save Log File
00C0: OF D8 F7 BE CD 6E 14 93 54 C3 00 07 FF FF FF FF	Clear Log Eile
00D0: FF FF FF FF FF FF FF 07 AB F6 CD 41 38 B5 AA 15 5B	Clear Log File
UUEU: U3 UI A7 B7 82 88 4B 2B 79 EC 43 UU U7 FF FF FF 🚽	Stop

In the top right part of the window you see **The used keys** and **The blocked keys** bookmarks.

Unfortunately we can't get the information about the number of used keys in this vehicle from the EIS dump based on processor 908. But if this car has locked keys we see them enriched in red.

Now according to which Mercedes you work with (W203 or W220) you must choose – put a dot in **ESL/ESM** window - and tick the positions where you fill in the keys. For example, you work with Mercedes W220 (you choose **ESM**) and you wish to fill in three new keys positions from 0 to 2.

MBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line	
Load Save FETL-64k bin FEL/ESM Calculate The blocked keys.	V Key-0
ESL ESM Help W203	✓ Key-2
Repair ESL/ESM Help W220 Load Save	т Кеу-З
	Key-4
	Г Кеу-б
EIS MC68HC908 EEprom is loaded:	🗖 Кеу-7
0010: 01 3D D2 10 86 2E 72 17 0F 6B 01 07 4D 69 B7 AA	— All
0020: 52 52 53 6C 2A 02 0F DA 84 58 2C 08 DE 4A 45 57 0030: 00 07 7B 48 40 90 34 74 C7 3C 3E 00 07 3D D0 ED	
0040: DF 51 44 93 48 49 00 07 D6 D9 83 6B 03 C5 29 02 0050: 90 00 07 42 5E 74 69 C6 91 9A F0 5E 00 07 D8 F7	
0060: BE CD 6E 14 93 54 C3 00 0F E6 F3 FC 84 C1 4F BE Calculate ECU	
0080: 21 F8 EB 08 72 62 5D 88 01 07 FF FF FF FF FF FF FF	
00A0: 3D D0 ED DF 51 44 93 48 49 00 0F D6 D9 83 68 03	
00B0: C5 29 02 90 00 0F 42 5E 74 69 C6 91 9A F0 5E 00 Save Log File	
00D0: FF FF FF FF FF FF 07 AB F6 CD 41 38 B5 AA 15 5B Clear Log File	
0060: 03 01 A7 67 62 00 48 28 77 6C 43 00 07 FF FF FF 🔽 Stop	

Now press **Calculate** after that you will see

MBkeyprog-2 v1.0		
W203_W220:908 W210_W220:05X3	2 W211_220:912 ESL/K-line	
- W203,W639,W215,W220: MC68H	.908	The used keys. 🗹 Kay-O
Load Save 🔽 ETL-64k.bin	ESL/ESM Calculate	The blocked keys. 🔽 🕅 🖉
	• ESL • ESM Help W203	🛛 🖾 Кау-2
	Repair ESL/ESM	Load Save KBY 🛛 🗆 Kay-3
	Help W220	📔 🔼 👘 💭 💭 💭 💭 💭 💭 💭 💭
	1	🗋 🔽 🛄 🍃 💘 3 🗖 Кау-5
0180: FF FF FF FF FF FF 03 FI	' FF FF FF FF FF FF FF FF	📕 🔚 Көү-б
0190: FF 07 FF FF FF FF FF FI	FF FF FF FF AA 00 01 01	Load Save ECU
01A0: 01 00 01 00 00 C2 E9 03	. FO ED BA 7C 5C 00 00 00	Help
01CO: 34 BO 8F C3 09 35 5B 23) C5 92 84 D6 68 86 60 C2) 58 FF 20 58 79 13 40 8F	A11
01D0: 82 6C 01 00 00 00 00 0	00 00 00 00 90 07 46 33	VIN
01E0: 80 20 61 44 FF 00 03 0;	00 00 00 00 01 01 00 00	
01F0: 00 00 00 00 00 61 03 0) FF FF FF FF FF FF FF FF	E7M
:Key-0 is calculated and save	d in all versions!	Calculate ECU
:Key-1 is calculated and save	d in all versions!	
:Key-2 is calculated and save	d in all versions!	Kenew ECU
EIS CPU-908 EEprom calculate	ed and saved!	Save Log File
. sam ssprom carculated and St	iveu:	Save Dog Tite
Now you may write the keys in	to ECU, if this necessary!	Clear Log File
		Stop

The following dumps will be automatically (!) saved to the same directory where the previously read EIS processor dump has been uploaded from. The new EIS processor dump **EIS_CPU-908_New.bin**, the new ESM (Electronic Selector Module) **ESM_New.bin** and the new three keys dumps in three different versions (!) (you can read about the different versions of the key dumps at the end of this manual) **Key-0_v1.bin**, **Key-0_v2.bin**, **Key-0_v3.bin**, **Key-1 v3.bin**, **Key-2 v2.bin**, **Key-2 v3.bin**.

Now you may generate a new ECU dump, where our new keys will be "located". To do so load the previously read ECU dump in the ECU window.

MBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line	
Wald Wodd Wald Wald Weath Washington The used keys.	🗹 Key-0
Load Save ETL-64k.bin ESL/ESM Calculate The blocked keys.	🗹 Көу-1
	- M Key-2
	🗖 Key-3
Repair ESL/ESM Help W220	🗖 Kev-4
	Kev-5
	Kev-S
0180: FF FF FF FF FF FF FF 03 FF	
	T veX-1
01B0: 00 00 00 00 00 B0 62 BD C5 92 B4 D6 68 8E 60 C2 EDC15-A000 (ST95P08)	- N 11
01C0: 3A B0 8F C3 09 35 5B 22 5B FF 2C 58 79 13 4C 8E	I ALL
01D0: 82 6C 01 00 00 00 00 00 00 00 00 00 90 07 46 33	
01E0: 80 20 61 44 FF 00 03 03 00 00 00 00 01 01 00 00	
01F0: 00 00 00 00 00 61 03 00 FF EDC16-A647(5195160)	
EDC16-A647 (ST95320)	
:Key-O is calculated and saved in all versions! EDC16-A648(ST95160)	
:Key-1 is calculated and saved in all versions! EDC16-A648(ST95320)	
:Key-2 is calculated and saved in all versions! ME 2.7 (579508)	
ELS CPU-906 EEProm calculated and saved! ME2.8 (5195908)	
. ESM EEPTOM CAlculated and Saved:	
Now you may write the keys into ECU, if this necessary! ClearLog File	
Stop	

If the loading is successful you will see

MBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line	
N203, W639, W215, W220: MC68HC908 The use	d keys. ☑ Key-0
Load Save ETL-64k.bin ESL/ESM Calculate	cked keys. 🛛 🕅 Kəy-1
○ ESL ⊙ ESM Help W203	KEY-2
Repair ESL/ESM Help W220 Load Sa	we C - w 1 - w 1
	- v.2 Key-4
	🛄 🥛 – v.3 🔲 Key-5
01A0: 01 00 01 00 00 c2 E9 01 F0 ED BA 7c 5c 00 00 00 📥	ve поп
01E0: 00 00 00 00 00 E0 62 ED CS 92 E4 D6 68 8E 60 C2	
01D0: 82 6C 01 00 00 00 00 00 00 00 00 00 00 90 07 46 33	Help
01E0: 80 20 61 44 FF 00 03 03 00 00 00 01 01 00 00	0618694784
OIFO: 00 00 00 00 00 61 03 00 FF FF FF FF FF FF FF FF	
:Key-O is calculated and saved in all versions!	153 87 79
:Key-1 is calculated and saved in all versions!	ilate ECU
EIS CPU-908 EEprom calculated and saved!	
ESM EEprom calculated and saved!	w ECU
Now you may write the keys into ECU, if this necessary!	Log File
EEprom ST95160 (EDC16_A646) is loaded.	r Log File
	Stop

In the circled windows you see VIN-code and ECU factory number. If a correct dump has been chosen while loading you will see, at the least, the right VIN-code. If the VIN-code field is empty you have chosen the wrong version while downloading the file. Press **Calculate ECU** and you see

MBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line	
W203, W539, W215, W220; MC68HC900 Load Save ETL-64k.bin ESL/ESM Calculate ESL • ESM Help W203	The used keys. VEY-0 The blocked keys. VEY-1 VEY-2 Load Save
Kepair ESL/ESM Help W220 I I 01F0: 00 00 00 00 00 61 03 00 FF	• - v.1 • Key-4 • - v.2 • Key-5 • - v.3 • Key-6
:Key-0 is calculated and saved in all versions! :Key-1 is calculated and saved in all versions! :Key-2 is calculated and saved in all versions!	Load Save BCU C Key-7
:EIS CPU-908 EEprom calculated and saved! :ESM EEprom calculated and saved!	WDB2110061A694784 A 646 153 87 79
Now you may write the keys into ECU, if this necessary! EEprom ST95160 (EDC16_A646) is loaded.	Calculate ECU Renew ECU
<pre>:Key-0 is calculated into Eeprom ECU! :Key-1 is calculated into Eeprom ECU! :Key-2 is calculated into Eeprom ECU! :ECU EEprom calculated and saved!</pre>	Save Log File Clear Log File
	Stop

The new ECU dump is automatically saved in the initial directory with **_New** added to its name.

Now you see all the dumps for programming the EIS, the three keys, ECU and ESM (Electronic Selection Module)

In the following picture you can see the location of EEPROM 93c56 microchip on the ESM plate.



Write the dump to the EIS processor, which has been generated and automatically saved before. Write the necessary dump versions to the key processors. Write the dump with the written keys to the ECU.

You may need to insert the key in the EIS several times (up to 32), till the key is "accepted'. Normally you succeed the first time.

Return the vehicle to the client!

2. Operation with bookmark W210_W220:05x32.

MBkeyprog-2 v1.0	
W203_W220:908_W210_W220:05X32_W211_220:912_ESL/K-line	
w202, w208, w210, w215, w220: 05x32 The used keys.	🗆 Кеу-О
Load Save ETL-64k.bin ESL/ESM Calculate The blocked keys.	🗆 Кеу-1
© ESL © ESM Help W210	🗆 Кеу-2
Repair FSL/FSM Load Save	🗖 Кеу-З
	🗖 Кеу-4
	🗆 Кеу-5
	□ Key-6
Load Save ECU	□ Kev-7
	🗖 All
VIN	
<u> </u>	
Calculate ECU	
Renew ECU	
Save Log File	
Clear Log File	
Stop	

The list of cars marked in red have MC68HC05X32 processor in their EIS.

Below you can see CPU1 processor location in the EIS of Mercedes W210.



Further you can see CPU2 processor location in the EIS of Mercedes W210.



Below you can see the location of CPU1 and CPU2 processors in the EIS of Mercedes W220



As an example we will study the process of writing three new keys been to Mercedes W210. We should read the contents of **CPU1** and **CPU2** processors from the EIS. Remember these processors are protected against reading and attempts to read them with the help of a programmer which can't evade this protection will lead to the initial dump damage! If you use **ETL** programmer, it is necessary to put a tick in the window with the inscription **ETL-64k.bin** in front of it.

Load the previously read dump to the program.



After loading you can see

2	🖌 MBkeyp	rog-2 v1	.0																			
	W203_W	₩220:9	08	W21	.0_W	1220):05	X32	W2	211_	220):91	L2 1	ESL,	/к-:	line						
	- <u>W202</u> Load	, W208	, w2)	10,3 ETT	21. 64	5, W2 1k.k	220: 	<u>0</u> :	EST	ZES	м				Calcu	late		T T	he us he bl	sed k locke	e <mark>ys.</mark> d keys.	Key-0 Key-1
									<u>с</u> е	SL	0	ESÞ	1	Η	elp W	7210	il				KEV	Key-2
									Re	pair :	ESL/	ESM		Η	elp W	7220			ad !	Save	⊙ - v.1	Г Кеу-3 Г Кеу-4
	 																				° - v.2 ° - v.3	Г Кеу-5
	EIS CP	U-1 EI	Epro	om i	is I	Load	ded:										^	L	ad s	Save	ECU	Г Кеу-6 Г Кеу-7
	0000: 0010:	FE O2 FF EF	45 FF	5a FF	D4 FC	BE FF	1A FF	00 FF	41 5C	62 7C	00 BA	80 ED	7F F0	90 01	02 E9	99 C2					Help	T All
	0020: 0030:	00 00 89 5F	FD DE	48 EA	01 3E	1F E3	0F 82	00 AA	FD 4A	F0 CB	2C 1B	00 96	dd A7	51 7B	АО 34	6C DD				VIN	ł	
	0040: 0050:	3B C3 FB C8	FC 7B	53 72	1в 7в	CA 18	FB FB	12 12	FC FC	39 39	FC FC	ED ED	FC	C8 C8	FC FC	95 95	=	Γ		P/H	ł	
	0060: 0070:	00 00 BF DF	00 8F	00 E1	00 7в	00 83	00 9C	00 FC	01 9A	00 53	00 77	00 E0	00 7F	00 CF	00 E3	00 D3		L	Ca	lculate	ECU	
	0080: 0090:	57 F7 A7 19	34 79	A4 02	3F 42	53 A7	4C A9	BF FD	8D C7	85 0F	78 3C	FC 34	73 9D	AE 7A	58 06	54 AF			Re	new	ECU	
	00A0: 00B0:	CC BA E9 E7	42 DB	98 7F	07 06	15 69	D4 A0	E9 8F	FC B9	7C 39	AD F2	1E EA	24 02	D9 51	Е5 В7	C8 BD			Sa	ve Log	g File	
	00CO: 00DO:	BB BC B4 07	7A 31	35 E0	15 7в	7E 27	BE 52	51 58	7C C7	9A 0F	88 3C	84 34	1F 9D	7E 7A	37 06	7C AF			Cl	ear Log	g File	
	00E0:	CC BA	42	98	07	15	D4	E9	FC	7C	AD	1E	24	D9	E5	С8	~			Stop		

MBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line	
w202, w208, w210, w215, w220: 05x32 The use	d keys. 🗌 🗆 Key-0
Load Save ETL-64k, bin ESL/ESM Calculate The blo	cked keys. 🗌 Key-1
	Kev-2
Load FE (PU-1 (256 byte)	KEY Key-3
Load EE CPU - 2 (256 byte) Repair ESL/ESM Help W220	$\sim 0 - v.1$
	- v.2
	🔟 🥈 – у.З 🔽 Кеу-5
	🗌 Кеу-б
EIS CPU-1 EEprom is loaded:	
0000: FE 02 45 5A D4 BE 1A 00 41 62 00 80 7F 90 02 99	
0010: FF EF FF FF FC FF FF FF 5C 7C BA ED F0 01 E9 C2	
0020: 00 00 FD 48 01 1F OF 00 FD FO 2C 00 DD 51 AO 6C	
0030: 89 5F DE EA 3E E3 82 AA 4A CB 1B 96 A7 7B 34 DD	V IN
UU4U: 3B C3 FC 53 1B CA FB 12 FC 39 FC ED FC C8 FC 95	P/N
0050; FB C8 7B 72 7B 18 FB 12 FC 39 FC ED FC C8 FC 95	
0000. 00 00 00 00 00 00 00 00 01 00 00 00 00	ilate ECU
0070. BF DF 0F 81 75 03 7C FC 7A 33 77 80 7F CF 83 53	
0090: A7 19 79 02 42 A7 A9 FD C7 0F 3C 34 9D 7A 06 AF	w ECU
00A0: CC BA 42 98 07 15 D4 E9 FC 7C AD 1E 24 D9 E5 C8	
00B0: E9 E7 DB 7F 06 69 A0 8F B9 39 F2 EA 02 51 B7 BD	Log File
00C0: BB BC 7A 35 15 7E BE 51 7C 9A 88 84 1F 7E 37 7C 📃 🚝 🧮	L - Th
00D0: B4 07 31 E0 7B 27 52 58 C7 OF 3C 34 9D 7A 06 AF	r Log File
00E0: CC BA 42 98 07 15 D4 E9 FC 7C AD 1E 24 D9 E5 C8	Stop

After loading you see



You see that key-0, key-1, key-2 are highlighted in green. It means that three active keys are written in this EIS. There are no blocked keys.

Actually, you can write a new key to any position you choose. But you need, in this case, one or several original keys, you need to know the key number to write a new key to its place. It is easy to learn the number of the active key by reading it in the program of **Mercedes NEC Key Programmer**, which is included or with the help of **MB Key Expert**, provided by our company.

Let's suppose all the keys, let's write three new keys to positions from 0 to 2.

MBkeyprog-2 v1.0 W203 W220:908 W210 W220:05X32 W211 220:912 ESL/K-line	
W202,W205,W210,W215,W220; 05X32 The used Load Save EEL-64k.bin ESL/ESM Calculate ESL/ESM ESL/ESM Help W210 Repair ESL/ESM Help W220 Load Save	Keys.Ked Keys.KeyKeyVeCorr \circ - v.1 \circ - v.2 \circ Key-3 \circ - v.2 \circ Key-5
EIS CPU-2 EEprom is loaded: 0000: FE 02 45 5A 09 02 19 96 98 42 54 00 1F FF FF 10 0010: 11 61 20 60 58 55 36 70 5C 7C BA ED F0 01 E9 C2 0020: 00 00 FD 48 01 1F 0F 00 FD F0 2C 00 DD 51 A0 6C 0030: 89 5F DE EA 3E E3 82 AA 4A CB 1B 96 A7 7B 34 DD 0040: 7C 46 3B 1B 3A F1 FB 12 FC 39 FC ED FC C8 FC 95 0050: 1C B8 0E E2 FD 3A FB 12 FC 39 FC ED FC C8 FC 95	ve Nev-6 ve Nev-6 ve Key-7 Help All
0060: 00	ate ECU 7 ECU Log File Log File

Choose ESL (steering wheel lock) in ESL/ESM window, tick the keys and press Calculate, upon completion you see

MBkeyprog-2 v1.0	
W203 W220:908 W210_W220:05X32 W211 220:912 ESL/K-line	
W202,W208,W210,W215,W220: 05X32 The used keys.	🗹 Key-0
Load Save ETL-64k.bin ESL/ESM Calculate The blocked keys.	🗹 Key-1
• ESL • ESM Help W210	Key-2
Repair ESL/ESM Hale W220	🔲 Кеу-З
	🔲 Кеу-4
<u> </u>	🔲 Кеу-5
0090: 78 2E 2B 5D 5E AF 36 7D C7 0F 3C 34 9D 7A 06 AF	🔲 Кеу-б
00B0. F9 F7 DB 7F 06 69 A0 8F B9 39 F2 FA 02 51 B7 BD	🔲 Кеу-7
00C0: 38 CC 94 FB 6F 7F AB 8C E4 BF D4 F4 FB FC CB B5	- 211
00D0: DB A3 8F F3 86 C9 64 87 C7 0F 3C 34 9D 7A 06 AF	
00E0: CC BA 42 98 07 15 D4 E9 FC 7C AD 1E 24 D9 E5 C8	
Calculate ECU	
:Key-0 is calculated and saved in all versions:	
:Key-2 is calculated and saved in all versions! Renew ECU	
EIS CPU'S EEproms calculated and saved!	
:ESL EEProm calculated and saved!	
Now you may write the keys into ECU, if this necessary! ClearLog File	
Stop	

The following dumps will be automatically (!) saved to the same directory where the previously read EIS processor dumps have been loaded from. The new EIS processor dumps EIS_CPU-1_NEW.bin and EIS_CPU-2_New.bin, the new dump ESL (steering wheel lock) under the name ESL_New.bin and the three new keys dumps in three new versions (you may read about the key dump versions at the end of this manual) under the names Key-0_v1.bin, Key-0_v2.bin, Key-0_v3.bin, Key-1_v1.bin, Key-1_v2.bin, Key-1_v3.bin, Key-2_v1.bin, Key-2_v3.bin.

Now you may generate a new ECU dump where our new keys will be "located". To do so load the previously read ECU dump in ECU window (after you have chosen the necessary version)

MBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line	
with with with with with with a set of the s	🗹 Key-0
Load Save ETL-64k bin ESL/ESM Calculate The blocked keys.	🗹 Key-1
	Kev-2
Help W210	Kev-R
Repair ESL/ESM Help W220	 ■ %=v=v
	∎ va⊼_a
<u> </u>	🔲 Кеу-э
0090: 78 2E 28 5D 5E AF 36 7D C7 OF 3C 34 9D 7A 06 AF 🛆 Load Save and	🔲 Кеу-б
00A0: CC BA 42 98 07 15 D4 E9 FC 7C AD 1E 24 D9 E5 C8	🔲 Кеу-7
UUBU: E9 E7 DB 7F U6 69 AU 8F B9 39 F2 EA U2 51 B7 BD EDC15-A000 (ST95P08)	
00000: DB A3 8F F3 86 C9 64 87 C7 0F 3C 34 9D 7A 06 AF	A 11
00E0: CC BA 42 98 07 15 D4 E9 FC 7C AD 1E 24 D9 E5 C8	
00F0: E9 E7 DB 7F 06 69 A0 8F B9 39 F2 EA 02 51 B7 BD	
EDC16-A647 (ST95160)	
EDC16-A647 (ST95320)	
:Key-O is calculated and saved in all versions! EDC16-A648 (ST95160)	
:Key-1 is calculated and saved in all versions!	
ETS CPU's REproms calculated and saved in all versions:	
:ESL EEprom calculated and saved!	
Now you may write the keys into ECU, if this necessary! ClearLog File	
Stop	

If the loading is successful you see



If the right dump has been chosen while loading, you will see at the least the right VIN-code. If the field of the VIN-code is empty you have chosen the wrong version while loading the file.

MBkeyprog-2 v1.0	7011 000.010 FST // Line										
W203_W220:908 W210_W220:03X32 W M202,W208,W210,W215,W220:05X32 W Load Save FETL-64k.bin ES W	W211_220:912 ESL/K-11ne SL/ESM Calculate ESL< ESM Repair ESL/ESM Help W210 Help W220	The used keys. The blocked keys. Load Save Key 0 - v.1	<pre>✓ Key-0</pre> ✓ Key-1 ✓ Key-2 ✓ Key-3 ✓ Key-4								
:Key-0 is calculated and saved i :Key-1 is calculated and saved i :Key-2 is calculated and saved i :EIS CPU's EEproms calculated and :ESL EEprom calculated and saved	:Key-O is calculated and saved in all versions! :Key-1 is calculated and saved in all versions! :Key-2 is calculated and saved in all versions! :EIS CPU's EEproms calculated and saved!										
Now you may write the keys into EEprom ST95P08 (EDC15C3) is load	Calculate ECU Renew ECU	>									
:Key-U is calculated into Eepron :Key-1 is calculated into Eepron :Key-2 is calculated into Eepron :ECU EEprom calculated and saved	m ECU! m ECU! m ECU! d!	Save Log File Clear Log File Stop									

The new ECU dump is automatically saved in the new directory with **_New** added to its initial dump

Now you see all the dumps for programming EIS processors, the three keys, ECU and ESL (steering wheel lock).

HBkeyprog-2 v1.0		
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line Load Save ESL New Open Select Help Password: 00 00 00 00 00 00 00 00 00 00 00 00 00	The used keys. The blocked keys.	<pre>Key-0 Key-1 Key-2 Key-3 Key-4 Key-5 Key-6 Key-6 Key-7</pre>
	Clear Log File	
	Stop	

3. Operation with bookmark ESL/K-line (Old).

You must distinguish between the old and new types of ESL (steering wheel lock)! Below you can see the old type of ESL which was used in models W202, W208, W210 the years of production up to 2000.



In some rare cases (the most recent years of production) the ESL had a new type microchip while they were in the old type box. Actually these types differ by a number of electrical, software and mechanic characteristics. We'll study only one. There are two processors in the old type ESL (CPU3 and CPU4 in our classification), which are not protected by a special password and can be erased. You should erase them before the procedure of writing the new dumps to these processors. If while working with the old type ESL (visually) you find out that a fast erasion is not possible choose ESL type NEW and continue to work as if with the new type which is described below.

In this example we deal with a usual old type ESL.

With the help of our device we can read the contents of **CPU1** and **CPU2** EIS processor, as well as the contents of **CPU3** and **CPU4** ESL processors through the diagnostic connector. These dumps are not full but we can use them as back-up.

Connect the diagnostic connector.

To read through the automobile diagnostic connector the switches on the socket must be in the following position



Before the procedure of reading you must insert the faulty key in the EIS (another auto key, the bottom of a disposable lighter any object which matches the size).

Press Read EIS

MBkeyprog-2 v1.0		
W203 W220:908 W210 W220:05X32 W211 220:912 ESL/K-line		
r Read. Write and Program ESL r Read EIS via K-line_	The used keys.	🗖 Кеу-О
Load Save ESL Read Frace Write W210, W220 Save	The blocked keys.	📕 Key-1
C Old Read EIS		🗖 Кеу-2
New Open Select Help		🗖 Кеу-З
Password: 00 00 00 00 00 00 00 00		🖬 Key-4
		🗖 Key-5
Connect		🗖 Кеу-б
Reading, please wait		🗖 Key-7
	a + +0	
	Dave Log File	
	Clear Log File	
	Stop	
	· · · · · · · · · · · · · · · · · · ·	

Upon completion you see

<mark>**</mark> *	lBkeyp	orog-	2 v1	.0																						
W:	203_	w22	0:9	08	W21	.0_W	220	:05	x 32	W2	211_	220):91	12	ESL,	/ K -2	line									
-1	Read,	Writ		d Pr	ogra	m ES	<u>st</u> —					-	ı rR	ead i	EIS 7	ria K	line		Th	e u	sed	keys		Γ	Kej	7-0
	Load	S.	ave	E	SL		R	ead	Er	ase	Wt	rite	w	210, 1	W220	80	IVO		Th	e b	lock	ed ko	eys.	1	l Kej	r-1
	5	ſ			01	d			a	1	TT		F	(ead	EIS	í IC)						ſ	Ke;	7-2
					Me	:141	0	pen	Se	lect	He	lp				L		1						1	l Kej	
		Pas	SWO	rd:	0	0 0	0 00	00	00	00	00	00												Γ	Ke;	(
	1								3															1	l Kej	r-5
00	150:	7в	25	D9	FC	7в	25	D9	FC	7в	25	D9	FC	7в	25	D9	FC	^						Γ	l Kej	7-6
00	60:	в9	F5	20	D8	B9	F5	20	D8	в9	F5	20	D8	в9	F5	20	D8							ſ	1 Key	r-7
	17U: 180•	EE 8B	EF 14	85	15 ng	EE 8B	EF 14	85	15	EE 8B	EF 14	85	15 ng	EE 8B	EF 14	85	15 ng									
00	190:	BO	FF	01	F 4	63	63	63	00	00	55	C2	8C	00	00	FF	8C									
ΕS	L CI	9 V -4	4 E E	Spro	om:																					
00	100:	D5	DE	13	11	EO	AC	46	E5	FD	84	6C	OD	FD	AD	A3	9D									
	120:	E9 D7	49	90 C7	FC F4	E9 D7	49	90	FC F4	E9 D7	49	90 C7	FC F4	E9 D7	49	90 C7	FC F4									
00	30:	0F	20	D9	48	OF	20	D9	48	OF	20	D9	48	0F	20	D9	48									
00	40:	7D	1A	ΟA	2E	7D	1A	0A	2E	7D	1A	0A	2E	7D	1A	ΟA	2E									
00	150:	7B	25	D9	FC	7B	25	D9	FC	7B	25	D9	FC	7B	25	D9	FC									
00	160: 170:	EE EE	EF	2U 85	15	B9 EE	EF	∠U 85	D8	EE EE	EF	∠U 85	D8	B9 EE	EF	2U 85	15			S	ave La	og File	1			
00	80:	8B	14	87	09	8B	14	87	09	8B	14	87	09	8B	14	87	09	Ш	-							
00	90:	вО	FF	01	F 4	63	63	63	00	00	55	C2	8C	00	00	FF	8C			С	lear Lo	og File	5			
																		~		_	Sto	р				

Press Save and save the read dumps one by one to the hard disk of your computer

🖌 MBkeyp	orog-	2 v1	.0																
W203	w22	0:9	08	W21	.0 W	220	: 05	x32	W2	211	220):91	12	SSL,	/K-:	line	1		
r Read,	Writ	ie an	d Pr	ogra	m ES	<u>п —</u>				_	-	ı rR	ead 1	EIS 1	ria K	-line-		The used keys.	🗖 Key-0
Load	S	ave	-E	SL		R	ead	Er	ase	W	rite	w	210,	W220	Sa	ive		The blocked key	s. 🛛 Key-1
~	Π			01	.d	1	cuta	LA	ase	***	ne	Т	Sand	EIC			ue ET	CDU 1	E Key-2
) Ne	W	0	pen	Se	lect	Ηe	elp	1	Nead	ETO	U	Sa	ve EI	CPU-2	E Key-3
	Pas	SWO	rd:	0	0 0	0 00	00	00	00	00	00					Sa	ve ES	. CPU-3	E Key-4
-				_												Sa	ve ES	. CPU-4	E Kev-5
		0.5		-	-	0.5				0.5		-	-	0.5					
0050:	7B	25	20	FC	7B	25	20	FC	7B	25	20	FC	7B	25	20	FC			
0070:	EE	EF	85	15	EE	EF	85	15	EE	EF	85	15	EE	EF	85	15			T VEX-V
0080:	8B	14	87	09	8B	14	87	09	8B	14	87	09	8B	14	87	09			
0090:	вО	FF	01	F 4	63	63	63	00	00	55	C2	8C	00	00	FF	8C			
ESL CH	9U-4	1 EF	Spro	>m:															
0000:	D5	DE	13	11	EO	AC	46	E5	FD	84	6C	OD	FD	AD	A3	9D			
0010:	E9 D7	49	90	FC F4	E9 D7	49	90	FC F4	E9	49	90	FC F4	E9 D7	49	90	FC F4			
0020:	0F	20	D9	48	0F	20	D9	48	0F	20	D9	48	0F	20	D9	48			
0040:	7D	1A	0A	2E	7D	1A	0A	2E	7D	1A	0A	2E	7D	1A	0A	2E			
0050:	7в	25	D9	FC	7в	25	D9	FC	7в	25	D9	FC	7в	25	D9	FC			
0060:	В9	F5	20	D8	В9	F5	20	D8	В9	F5	20	D8	В9	F5	20	D8			-
0070:	EE	EF	85	15	EE	EF	85	15	EE	EF	85	15	EE	EF	85	15		Save Log File	
0080:	οВ	14 FF	σ/ 01	09 F4	63 63	14	67	09	σB	14	0/ C2	09 8C	08	14	O/ FF	09 8C	-	Clear Log File	
0050.	ЪU	E E	υL	1.4	00	00	00	00	00	UU.	04		00	00	E E				=
																	~	Stop	

File name is given automatically!

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Пои документы					
Сетевое окружение	<u>И</u> мя файла: <u>Т</u> ип файла:	CPU-1_K-line		<u>•</u>	Со <u>х</u> ранить Отмена

Disconnect the ESL connector and connect the appropriate connector from our set. If you have not done the previous reading through the diagnostic connector we recommend to read and save the original ESL dumps to the hard disk of your computer.

To read and later write CPU3 processor the switches on the connector must be in the following position.



Press Read – the process of reading CPU3 processor has begun

MBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line Read, Write and Program ESL Load Save ESL • Old • New Open Select Help Password: 00 00 00 00 00 00 00 00 Connect Reading, please wait	The used keys. The blocked keys Key-1 Key-2 Key-3 Key-4 Key-5 Key-6 Key-7
×	Save Log File Clear Log File Stop

Upon completion you see

MBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line Read, Write and Program ESL . . . Load Save <th>The used keys. The blocked keys. Key-1 Key-2 Key-3 Key-4 Key-5</th>	The used keys. The blocked keys. Key-1 Key-2 Key-3 Key-4 Key-5
Connect Reading, please wait ESL EEprom:	— Кеу-б — Кеу-7
0000: D5 DE 13 11 E0 AC 46 E5 FD 84 6C 0D FD AD A3 9D 0010: E9 49 90 FC E9 49 90 FC E9 49 90 FC E9 49 90 FC 0020: D7 22 C7 F4 D7 22 C7 F4 D7 22 C7 F4 D7 22 C7 F4	
0030: 0F 20 D9 48 0F 20 D9 48 0F 20 D9 48 0F 20 D9 48 0040: 7D 1A 0A 2E 7D 1A 0A 2E 7D 1A 0A 2E 7D 1A 0A 2E 0050: 7B 25 D9 FC 7B 25 D9 FC 7B 25 D9 FC 7B 25 D9 FC 0060: B9 F5 20 D8 B9 F5 20 D8 B9 F5 20 D8 B9 F5 20 D8	
0070: EE EF 85 15 EE EF 85 15 EE EF 85 15 EE EF 85 15 0080: 8B 14 87 09 8B 14 87 09 8B 14 87 09 8B 14 87 09 0090: B0 FF 01 F4 63 63 63 00 00 55 c2 8c 00 00 FF 8c	Save Log File
	Clear Log File Stop

Press Save and save dump to the hardware

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In this case you must add 3 to ESL name

To read the contents of CPU4 processor you must move the switches on the connector to the following position



Press Read - the process of reading CPU4 processor has begun

MBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line	
Read, Write and Program ESL Read EIS via K-line The used keys.	🗆 Кеу-О
Load Save ESL Read Brace Write W210, W220 Save The blocked keys.	🔲 Кеу-1
• Old	□ Key-2
New Open Select Help Read EIS	r Key-3
Password: 00 00 00 00 00 00 00 00	Kev-4
	Key-5
	- Key 5
Connect	Г Кеұ-б
Reading, please wait	🗆 Кеұ-7
ם ארו הארומים בארומים ב היא היא היא היא היא היא היא היא היא היא	
0010: E9 49 90 FC E9 49 90 FC E9 49 90 FC E9 49 90 FC	
0020: D7 22 C7 F4 D7 22 C7 F4 D7 22 C7 F4 D7 22 C7 F4	
0030: OF 20 D9 48 OF 20 D9 48 OF 20 D9 48 OF 20 D9 48	
0040: 7D 1A 0A 2E 7D 1A 0A 2E 7D 1A 0A 2E 7D 1A 0A 2E	
0050: 7B 25 D9 FC 7B 25 D9 FC 7B 25 D9 FC 7B 25 D9 FC	
0050: BY F5 20 D8 BY F5 20 D8 BY F5 20 D8 BY F5 20 D8 0070, pp pp 95 15 pp pp 95 15 pp pp 95 15 pp pp 95 15	
0078. EE EF 03 13 EE EF 03 13 EE EF 03 13 EE EF 03 13	
0090: B0 FF 01 F4 63 63 63 00 00 55 C2 8C 00 00 FF 8C	
Connect Save Log File	
Reading, please wait	
Clear Log. File	
Stop	

Upon completion you see

*	MBkeyp	orog-	2 v1	.0															
W	1203_	3 w220:908 w210 w220:05x32 w211 220:912 ESL/K-line																	
Ir	Read,			d Pr		m ES	SL —						ן ך R	ead I	EIS 1	ria K			The used keys. Key-0
	Load	S I	ave		SL	d	R	ead	Er	ase	W	rite	W	210,	W220	Sa	ave		The blocked keys. Key-1
) [Ne	W	0	pen	Se	lect	He	elp	I	Read	EIS	Ľ			Key-3
	-	Pas	SWO	rd:	0	0 0	0 00	00	00	00	00	00							Kev-4
					1														Key-5
	070.	EE	EF	85	15	EE	EF	85	15	EE	EF	85	15	EE	EF	85	15	~	□ Key-6
0	080:	8B	14	87	09	8B	14	87	09	8B	14	87	09	8B	14	87	09		_ Key-7
0	090:	вО	FF	01	F 4	63	63	63	00	00	55	C2	8C	00	00	FF	8C		
C P	onnec	st.	 nle		- w	∍i+													
E	SL EF	Spre	om:	Jub.															
0	000:	D5	DE	13	11	ΕO	AC	46	E5	FD	84	6C	0D	FD	AD	AЗ	9D	-	
0	010:	E9	49	90	FC	E9	49	90	FC	E9	49	90	FC	E9	49	90	FC		
0	020.	0F	20	D9	48	0F	20	D9	48	0F	20	D9	48	0F	20	D9	48		
0	040:	7D	1A	0A	2E	7D	1A	0A	2E	7D	1A	0A	2E	7D	1A	0A	2E		
0	050:	7B	25	D9	FC	7B	25	D9	FC	7B	25	D9	FC	7B	25	D9	FC	H	
0	060: 070:	EE EE	F5 EF	20	15	EE EE	F5 EF	2U 85	D8	EE EE	F5 EF	20	D8	EE EE	F5 EF	20	D8 15		Save Log File
Ō	080:	8B	14	87	09	8B	14	87	09	8B	14	87	09	8B	14	87	09		
0	090:	вO	FF	01	F 4	63	63	63	00	00	55	C2	8C	00	00	FF	8C		Clear Log File
																		~	Stop

Press Save and save the dump to the hard disk

Сохранить как	È.				?
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Сетевое окружение	<u>И</u> мя файла:	ESI		<u> </u>	Сохранить
	<u>Тип файла:</u>	*.bin		-	Отмена

In this case add 4 to ESL name

After you have saved the original dumps start the procedure of erasing. Move the switches to the position to work with **CPU3**



W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line Read EIN via K-line Load Save ESL New Open Select Help Password: 00 00 00 00 00 00 00 00 00 Read EIS In Password: 00 00 00 00 00 00 00 00 Read EIS In Read EIS IN R	MBkeyprog-2 v1.0	
Save Log File Clear Log File	W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line Read, Write and Program ESL Load Save ESL New Open Select Help Password: 00 00 00 00 00 00 00 00 00 Erasing, Wait Step 1: ESL opened!	The used keys. The blocked keys Key-1 Key-2 Key-3 Key-4 Key-5 Key-6 Key-7 Save Log File Clear Log File

After the contents of **CPU3** processor have been erased the ESL must unlock the steering column. The vehicle can be rowed!

Press Load and upload ESL_New dump which has been generated earlier to the program

MBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line Read, Write and Program ESL Load Save ESL 0 0ld New Open Select Help Password: 00 00 00 00 00 00 00 00 00 00 00 00 00	Key-0 Key-1 Key-2 Key-3 Key-4
Erasing. Wait Step 1: ESL opened! ESL EEprom is loaded:	Г Кеу-б Г Кеу-7
0000: B5 7E 1C 57 B2 CA 51 69 30 C0 B4 61 76 C9 15 E2 0010: 9E 40 80 F6 F6 2F 1D B6 34 46 22 A9 22 9A E9 9C 0020: 76 0F E1 88 89 28 8C 76 08 10 34 5D 2C 41 5A 3E 0030: DC 77 EF C6 2D 49 29 66 2E BB DA A6 1F C8 EE 7D 0040: D7 3C CF A3 27 D3 FC 0C 23 B2 CF 66 87 67 5E 62 0050: B4 B5 D2 FD 57 9E 5D 14 DA 9C 3D D8 1A 3E 8A A6	
0060: E4 2B 79 16 88 3E F6 A6 12 78 AC 7C 80 42 C2 FE 0070: 6E FF 59 A4 83 E3 B3 B9 F5 96 E1 D9 AC 97 72 F6 0080: 8B 14 87 09 8B 14 87 09 8B 14 87 09 8B 14 87 09 0090: FF FF FF FF 63 63 63 00 00 55 FF FF 00 00 FF FF Necessary to select password. Stop]

Press Write, you see

🖥 MBkeyprog-2 v	1.0												
W203_W220: S	008 W2 nd Progr ESL 0 0 0 N	10_w2 am ESI 1d ew 00 00	220:05 Read Open 00 00	Erase Select	211_ Wn Hel	220:	912 Read W210 Read	ESL EIS W220	/K tia K Sa	line Lline ave		The used keys. The blocked keys:	Key-0 Key-1 Key-2 Key-3 Key-4
ESL opened!	is los	ded.		T			-						─ Key-5 ─ Key-6 ─ Key-7
0000: B5 7E 0010: 9E 40 0020: 76 0F	1C 57 80 F6 E1 88	7 B2 (5 F6 2 3 89 2	CA 51 2F 1D 28 8C	69 30 B6 34 76 08	C0 46 10	B4 6 22 A 34 5	1 76 9 22 D 20	5 C9 9A 2 41	15 E9 5A	E2 9C 3E			т кеұ-≀
0030: DC 77 0040: D7 3C 0050: B4 B5	EF C6 CF A3 D2 FI	5 2D 4 3 27 1 5 57 9	49 29 D3 FC 9E 5D	66 2E OC 23 14 DA	BB B2 9C	DA A CF 6 3D E	.6 1E 6 87 8 1A	C8 67 3E	EE 5E 8A	7D 62 A6			
0080: E4 28 0070: 6E FF 0080: 8B 14 0090: FF FF	59 A4 87 09 FF FE	9 88 1 9 88 1 7 63 (E3 E3 14 87 63 63	B9 F5 09 8B 00 00	96 14 55	E1 E 87 C FF F	0 AC 9 AC 9 8E F OC	97 97 14	72 87 FF	F6 09 FF	100		
Necessary t Connect OK!	o sele	ect pa	asswol	rd.								Save Log File	
Wait											~	Stop	

Upon completion you see

MBkeyprog-2 v1.0		
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line		
r Read, Write and Program ESL rRead EIS via K-line-1	he used keys.	🗆 Кеу-О
Load Save ESL Pood From With W210 W220 Save	he blocked keys.	🗆 Кеу-1
• Old Frase write		Key-2
New Open Select Help Read EIS		Kev-3
Bassword: 00 00 00 00 00 00 00 00		Key-4
Password.		Key 4
		Кеу-5
Necessary to select password.		🗆 Кеу-б
		🗌 Кеу-7
Connect OK!		
Walt		
0000 · B5 7F 1C 57 B5 7F 1C 57 B5 7F 1C 57 B5 7F 1C 57		
0010: 9E 40 80 F6 9E 40 80 F6 9E 40 80 F6 9E 40 80 F6		
0020: 76 OF E1 88 76 OF E1 88 76 OF E1 88 76 OF E1 88		
0030: DC 77 EF C6 DC 77 EF C6 DC 77 EF C6 DC 77 EF C6		
0040: D7 3C CF A3 D7 3C CF A3 D7 3C CF A3 D7 3C CF A3 🗖		
0050: B4 B5 D2 FD B4 B5 D2 FD B4 B5 D2 FD B4 B5 D2 FD		
0060: E4 2B 79 16 E4 2B 79 16 E4 2B 79 16 E4 2B 79 16		
0070: 6E FF 59 A4 6E FF 59 A4 6E FF 59 A4 6E FF 59 A4		
UU8U: 8B 14 87 U9 8B 14 87 U9 8B 14 87 09 8B 14 87 09	Save Log File	
Drogrammed and checked OKL	Clear Log File	
riogrammed and Checked, OK:		
	Stop	

Move the switches to the position to work with CPU4



Press Erase and upon completion you see

MBkeyprog-2 v1.0		
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line Read Write and Program ESL Load Save ESL • Old • New Open Select Help Password: 00 00 00 00 00 00 00 00 Erasing. Wait Step 1: ESL opened! Erasing. Wait Step 1: ESL opened!	The used keys. The blooked keys:	 Key-0 Key-1 Key-2 Key-3 Key-4 Key-5 Key-6 Key-7
	Save Log File Clear Log File	
~	Stop	

Press Load and load (the same) ESL_New dump which has been generated earlier to the program

MBkeyprog-2 v1.0			
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line	∋		
Read, Write and Program ESL Read EIS via K-line		The used keys.	🗆 Кеу-0
Load Save ESL Read Erase Write W210, W220 Save		The blocked keys.	🗆 Кеу-1
• Old Read FIS			🗆 Кеу-2
Open Select Help			🗖 Кеу-З
Password: 00 00 00 00 00 00 00 00			🗆 Кеу-4
			🗖 Кеу-5
0070: 6E FF 59 A4 6E FF 59 A4 6E FF 59 A4 6E FF 59 A4	^		🗆 Кеу-б
0080: 8B 14 87 09 8B 14 87 09 8B 14 87 09 8B 14 87 09			🗆 Кеу-7
0090: B0 FF 01 F4 60 60 60 01 F4 FF C2 8C B0 F9 FF 8C			
Programmed and checked. OK!			
0000. B5 7E 1C 57 B2 CA 51 69 30 C0 B4 61 76 C9 15 E2			
0010: 9E 40 80 F6 F6 2F 1D 86 34 46 22 A9 22 9A E9 9C			
0020: 76 OF E1 88 89 28 8C 76 08 10 34 5D 2C 41 5A 3E			
0030: DC 77 EF C6 2D 49 29 66 2E BB DA A6 1F C8 EE 7D			
0040: D7 3C CF A3 27 D3 FC 0C 23 B2 CF 66 87 67 5E 62			
0050: B4 B5 D2 FD 57 9E 5D 14 DA 9C 3D D8 1A 3E 8A A6			
0060: E4 2B 79 16 88 3E F6 A6 12 78 AC 7C 80 42 C2 FE			
0070: 6E FF 59 A4 83 E3 B3 B9 F5 96 E1 D9 AC 97 72 F6		Com Lus Els	
UUSU: 88 14 87 U9 88 14 87 U9 88 14 87 U9 88 14 87 U9	III.	Save Log File	
Necessarv to select password.		Clear Log File	
	~	Stop	

MBkeyprog-2 v1.0	
W203 W220:908 W210 W220:05X32 W211 220:912 ESL/K-line	
Read, Write and Program ESL Read EIS via K-line The used keys	з. 🗌 Кеу-О
Load Save ESL Read Erase Write W210, W220 Save The blocked B	eys. Key-1
• Old Read EIS	□ Кеу-2
	🗖 Кеу-З
Password: 00 00 00 00 00 00 00 00	🗖 Кеу-4
	🗖 Кеұ-5
Programmed and checked. OK!	🗖 Кеу-б
ESL EEprom is loaded:	🗖 Кеу-7
0000: B5 7E 1C 57 B2 CA 51 69 30 C0 B4 61 76 C9 15 E2	
UUIU: 96 40 80 F6 F6 2F ID 86 34 46 22 A9 22 9A 69 9C 0020: 76 0g g1 88 89 28 80 76 08 10 34 5p 20 41 5p 3g	
0020. 70 0F EI 00 09 20 0C 70 00 10 34 35 2C 41 3A 3E	
0040: D7 3C CF A3 27 D3 FC 0C 23 B2 CF 66 87 67 5E 62	
0050: B4 B5 D2 FD 57 9E 5D 14 DA 9C 3D D8 1A 3E 8A A6	
0060: E4 2B 79 16 88 3E F6 A6 12 78 AC 7C 80 42 C2 FE	
0070: 6E FF 59 A4 83 E3 B3 B9 F5 96 E1 D9 AC 97 72 F6	
UU8U: 8B 14 87 U9	
Necessary to select password	
Save Log Fil	Ba
Connect OK!	
Wait Clear Log Fil	2
- Stop	

Upon completion you see

MBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-1	ine
Read, Write and Program ESL Read EIS via K-l	ime I The used keys. Key-0
Load Save ESL Read Frase Write W210, W220 Sav	ve The blocked keys. Key-1
• Old Inter March Bood FIS	_ Кеу-2
Open Select Help	🔟 🗖 Кеу-З
Password: 00 00 00 00 00 00 00 00	🗖 Кеу-4
	Key-5
Negagary to coloct pageword	Kev-6
Mecessary to serect password.	Kev-7
Connect OK!	
Wait	
ESL EEprom:	
UUUU: B5 7E 1C 57 B5 7E 1C 57 B5 7E 1C 57 B5 7E 1C 5	57
UULU: 9E 4U 8U F6 9E 4U 8U F6 9E 4U 8U F6 9E 4U 8U F 0000. 76 0F F1 00 76 0F F1 00 76 0F F1 00 76 0F F1 0	Ľ6
0020: 70 DF EI 00 70 DF EI 00 70 DF EI 00 70 DF EI 0	00 C6
0030. DC 77 MF CO DC 77 MF CO DC 77 MF CO DC 77 MF C	A3
0050: B4 B5 D2 FD B4 B5 D2 FD B4 B5 D2 FD B4 B5 D2 F	FD
0060: E4 2B 79 16 E4 2B 79 16 E4 2B 79 16 E4 2B 79 1	16
0070: 6E FF 59 A4 6E FF 59 A4 6E FF 59 A4 6E FF 59 A	A4
0080: 8B 14 87 09 8B 14 87 09 8B 14 87 09 8B 14 87 (09 Save Log File
0090: B0 FF 01 F4 60 60 60 01 F4 FF C2 8C B0 F9 FF 8	8C E Clear Lag File
Programmed and checked. OK!	Clear Log File
	Stop

Disconnect our device and connect the ESL connector back to it

Write the dumps (which have been generated earlier and automatically saved) to EIS processors. Write the correct dump versions to the key processors. Write the dump with the written keys to the ECU (it's actual only for "res-

tyled" W210s, keys couldn't be written in older models in their ECUs – they had a "characteristic" of ECU matching this EIS).

You may need to insert the key in the EIS several times (up to 32!), till the key is "accepted". Normally you succeed the first time.

Return the car to the client!

4. Operation with bookmark W211_W220:912.

MBkeyprog-2 v1.0	
W203 W220:908 W210 W220:05X32 W211 220:912 ESL/K-line W209, W211, W219, W220: MC9S12, MC6BHC912 Load Save CPU ODO ESL/ESM ESL 9912 9912 9912 New odo ESM Help W211 Help W211	The used keys. The blocked keys Key-1 Key-2 Load Save C- v.1 C- v.2 Load Save ECU Help Help Calculate ECU Renew ECU Save Log File Clear Log File Stop

The cars which have MC9S12 processor in their EIS are marked in red.

How can you identify the type of processor correctly? Before, you could identify the type by the mask on the box after unsoldering the processor. Now many use the programmers for in-circuit (onboard) programming (without unsoldering), e.g. **Rosfar** programmer.

Disassemble the EIS. You see on the main board ST 12 inscription



It means you should choose 9S12 type of the processor in your program window.

If you see HC12 inscription on the board



it means you should choose 912 processor type in your CPU program window

Let's study the work of the program with **9S12** as an example. Chose according processor in CPU window. Upload dump has been read from EIS.

MBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line W203_W211, W219, W200 M09512, M009512 Calculate Load Save CPU ODO ESL/ESM Load EE EIS (912): Adress: \$ 800-\$ FFF Size: 2048 byte ESM Help W211	The used keys.Key-0The blocked keys.Key-1Load SaveYYY </th

Upon loading completion you see

HBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line Load Save CPU ODO ESL/ESM Calculate 912 9512 New odo ESL/ESM ESL ESM Help W211 EIS EEprom is loaded: MC68HC9S12 - QFP80	The used keys. The blocked keys. Key-0 Key-1 Key-2 Key-3 Key-4 Key-5 Key-5 Key-5 Key-6 Key-7 Key-7 Help Help All VIN P/N Calculate ECU Save Log File Clear Log File Stop

You see that two active keys are written at 0 and 1 positions. Let's assume we have to write a third key to position 2. Tick position in front of **Key-2**.

As in our example we work with Mercedes W211 we choose ESL in ESL/ESM window.

Press Calculate

MBkeyprog-2 v1.0	
MBkeyprog-2 v1.0 W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line W203_W210_W210_W220:05X32 W211_220:912 ESL/K-line Load Save CPU 912 912 912 9176947 New odo ESL/ESM Help W211 EIS EEprom is loaded: MC68HC9S12 - QFP80 :Key-2 is calculated and saved in all versions!	The used keys. The blocked keys. Load Save KEY - v.1 - v.2 - v.3 Load Save BCU - v.3 - v.3 - v.3 - v.3 - v.3 - v.3 - v.3 - v.4 - Key-0 - Key-1 - Key-1 - Key-2 - Key-3 - Key-5 - Key-7 - Key
:EIS CPU-9512 EEprom calculated and saved! :ESL EEprom calculated and saved! Now you may write the keys into ECU, if this necessary!	VIN P/N Calculate ECU
	Renew ECU
	Save Log File Clear Log File
	Stop

In the initial directory (where we loaded the EIS processor dump from) automatically (!) the following dumps are saved. The new dump **EIS_CPU-9S12_New.bin**, the new ESL dump **ESL_New.bin**, the new key dump in three versions (you can read about the key dump versions at the end of this manual) **Key-2_v1.bin**, **Key-2_v2.bin**, **Key-2_v1.bin**.

Now you can generate a new ECU dump, where our new keys will be located. To do so load the previously read ECU dump in the ECU window.



If loading is successful you see

MBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line	
Load Save CPU ODO ESL/ESM Calculate	te used Keys.
• 912 176947 • ESL ESL/ESM • 9512 New odo • ESM Help W211 Loa	ad Save KEY
EIG REPromis looded: MC684C0012 - OFR0	- v.2 - v.3
:Key-2 is calculated and saved in all versions! :EIS CPU-9512 EEprom calculated and saved!	ad Save ECU E Key-7
ESL EEprom calculated and saved!	B2110061A694784
Now you may write the keys into ECU, if this necessary	646 153 87 79
haprom STSSIDD (hbeite_koto) is ioaded.	Calculate ECU Renew ECU
	Save Log File
	Clear Log File
	Stop

In the circled windows you see VIN-code and the factory number. If the correct dump has been chosen while loading you will see the right VIN-code . If the VIN-code field is empty it means you have chosen the wrong version while loading. Press **Calculate ECU** and you see.



The new ECU dump is automatically saved in the initial directory with adding _New to its initial name.

Now you have a new dump for EIS processor programming, new key programming, ECU and ESL programming.

5. Operation with ESL/K-Line bookmark (New)

You must distinguish between the old and new ESL types! Below you can see the new ESL type which was used in W203, W209, W211 types.



Connect the diagnostic connector. Disconnect the ESL connector and connect the appropriate connector from our set. To work with the new ESL processor the switches on the connector must be in the following position



MBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line	
Read, Write and Program ESL Read EIS via K-line-	🗆 Кеу-0
Load Save ESL Read Frase Write W210, W220 Save The blocked keys.	🗆 Кеу-1
	🗹 Кеу-2
New Open Select Help Read EIS	□ Key-3
Password: 00 00 00 00 00 00 00 00	Kev-4
	Key-5
	Rey-5
Connect	🗆 кеу-ө
Reading, please wait	🗆 Кеу-7
ESL EEprom:	
00100: CA FF ID DU CA FF ID DU CA FF ID DU CA FF ID DU	
0020. FF 63 87 CB DA 63 87 CB DA 63 87 CB DA 63 87 CB DA 63 87 CB	
0030: AD 11 A5 66 AD 11 A5 66 AD 11 A5 66 AD 11 A5 66	
0040: AD 11 A5 66 AD 11 A5 66 AD 11 A5 66 AD 11 A5 66	
0050: DD 0A 6A DE DD 0A 6A DE DD 0A 6A DE DD 0A 6A DE	
0060: BB E4 27 A2 BB E4 27 A2 BB E4 27 A2 BB E4 27 A2	
0070: D2 A3 AF 7B D2 A3 AF 7B D2 A3 AF 7B D2 A3 AF 7B	
0080: 34 56 82 E4	
UU9U: FF FF F4 U1 63 63 63 UU UU 55 41 02 00 00 F7 E1	
Necessary to select password.	
Clear Log File	
Stop	

If you only need to unlock the steering column, then press **Open**, in this case an automatic process of all eight keys hashes selection starts and the ESL opens.

MBkeyprog-2 v1.0		
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line Read, Write New Read Erase Write W210,W220 Save Load Save ESL Read Erase Write W210,W220 Save New Open Select Help Read EIS Read EIS	The used keys. The blocked keys.	<pre>Key-0 Key-1 Key-2 Key-3 Key-4</pre>
\$1BA000000 N calk \$1BB000000 N calk \$1BB000000 N calk \$1BD000000 N calk \$1BD000000 N calk \$1BF000000 N calk \$1BF000000 N calk \$1C000000 N calk \$1C000000 N calk		- Key-5 - Key-6 - Key-7
\$1C2000000 N calk \$1C3000000 N calk \$1C4000000 N calk \$1C5000000 N calk 8C 58 FF 7C 99 DE D5 2F < This is a hash of 0 key. Lets try to open OKIII Good!	Save Log File Clear Log File Stop	

To write a new dump to the ESL, it is necessary to erase previously, which is not possible without the correct password selection

If you have not used the Open function before the operation of the password selection it is necessary to press Read. Then press Select, the password selection starts.

HBkeyprog-2 v1.0	- • ×
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line Koad, Woite and Program ESL Read Erase Write Load Save ESL Read Erase Write New Open Select Help Read EIS Image: Constraint of the select Password: 00 00 00 00 00 00 00 00 00 00 00 Image: Constraint of the select Image: Constraint of the select	The used keys. The blocked keys. Key-1 Key-2 Key-3 Key-4
B3 C1 EE 46 2B 2A 27 4E < Random.	⊏ Кеу-5 ⊏ Кеу-6 ⊏ Кеу-7
\$0005000000 N calk \$0006000000 N calk \$0007000000 N calk \$0008000000 N calk \$0009000000 N calk \$0009000000 N calk	
\$000B000000 N calk \$000C000000 N calk \$000D000000 N calk \$000E000000 N calk \$000F000000 N calk	Save Log File Clear Log File Stop

When the password is found you will see.

HBkeyprog-2 v1.0		
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line New Person Select Help Password: 42 D8 B9 E7 1B EA 9F 39	The used keys. The blocked keys. Save Log File Clear Log File	 Key-0 Key-1 Key-2 Key-3 Key-4 Key-5 Key-6 Key-7

If you are not going to erase in this session, you should write the found password on paper, in order to save your time next time. In our example after successful finding of the password press **Erase** immediately and you get

MBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line Load Save ESL 0ld 0pen Select Help Password: 42 D8 B9 E7 1B EA 9F 39 S00DB000000 N calk \$00DD00000 N calk \$00DD00000 N calk	The used keys. The blocked keys. Key-1 Key-2 Key-3 Key-4 Key-5 Key-6 Key-7
<pre>\$00DE000000 N calk \$00DF000000 N calk \$00E0000000 N calk \$00E1000000 N calk \$00E2000000 N calk OK 111 Good! 42 D8 B9 E7 1B EA 9F 39 < This is a password! Erasing. Wait Step 1: Please, wait several minutes Step 2: Erased</pre>	Save Log File Clear Log File Stop

Now your ESL is ready for the new dump writing. In the same way you can prepare the used ESL for writing and put it away for "better times"

Load the previously generated **ESL_New.bin** file to the program

HBkeyprog-2 v1.0	- • ×
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line Read Write and Program ENL Read Els via K line Load Save ESL Read Erase Write Old Old Read Erase Write Write	The used keys. The blocked keys. Key-1 Key-2
Password: 42 D8 B9 E7 1B EA 9F 39	□ Key-3 □ Key-4 □ Key-5
ESL EEprom is loaded: 0000: B6 0A FD 14 53 78 D8 C7 C8 54 9B B6 52 70 DA 49 0010: DC E0 A3 9D E5 C0 8A 15 0C 53 B3 5C 14 4E C4 62 0020: 79 18 07 51 9F B6 C6 5F EF 7F D5 58 80 0D F9 86 0030: 31 44 ED 7A 66 A9 6A 2F C7 D7 BF 00 97 2A CF BF	_ кеу-6 _ Кеу-7
0040: EC OF EF A8 6C BD 61 DF 4F D2 AC 80 CD D0 69 7F 0050: 93 B6 A5 66 2D 69 E5 C9 A1 40 2C D5 60 EC BA 8C 0060: 57 2C F7 82 84 A3 FE AC C6 E9 4B 95 75 23 C2 ED 0070: 14 08 47 B1 05 66 81 A5 AE 3D 08 D4 69 41 35 23	
0080: F4 /1 E0 C8 F4 /1 E0 C8 F4 /1 E0 C8 F4 /1 E0 C8 0090: FF FF FF FF 63 63 63 00 00 55 FF FF 00 00 FF FF Necessary to select password.	Save Log File
	Clear Log File Stop

Press Write

MBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line	
Read, Write and Program ESL Read EIS via K-line The used keys.	🗆 Кеу-О
Load Save ESL Read Erast Write W210, W220 Save The blocked keys.	🗆 Кеу-1
	🗆 Кеу-2
Den Select Help	🗆 Кеу-З
Password: 42 D8 B9 E7 1B EA 9F 39	🗆 Кеу-4
	🗆 Кеу-5
ESL EEprom is loaded:	🗆 Кеу-б
0000: B6 0A FD 14 53 78 D8 C7 C8 54 9B B6 52 70 DA 49	_ Key-7
0010: DC E0 A3 9D E5 C0 8A 15 OC 53 B3 5C 14 4E C4 62	
0020: 79 18 07 51 9F B6 C6 5F EF 7F D5 58 80 0D F9 86	
UISU: 31 44 ED /A 66 A9 6A 2F C/ D/ BF UU 9/ 2A CF BF	
0050: 93 B6 A5 66 2D 69 E5 C9 A1 40 2C D5 60 EC BA 8C	
0060: 57 2C F7 82 84 A3 FE AC C6 E9 4B 95 75 23 C2 ED	
0070: 14 08 47 B1 05 66 81 A5 AE 3D 08 D4 69 41 35 23	
0080: F4 71 E0 C8 F4 71 E0 C8 F4 71 E0 C8 F4 71 E0 C8	
UU9U: FF FF FF FF 63 63 63 0U UU 55 FF FF 00 00 FF FF	
medessary to serect password.	
Connect OKI Save Log File	
Wait Clear Log File	
Stan	
N Stop	

Upon completion you see

HBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line	
Read, Write and Program ESL Read EIS via K-line	The used keys.
Load Save ESL Read Erase Write W210, W220 Save	The blocked keys. Key-1
• New Open Select Help Read EIS	Key-2
Password: 42 D8 B9 E7 1B EA 9F 39	⊂ Key-4
	_ Кеу-5
Necessary to select password.	🗖 Кеу-б
Connect ON	🗖 Кеу-7
Wait	
ESL EEprom:	
0000: B6 0A FD 14 B6 0A FD 14 B6 0A FD 14 B6 0A FD 14	
0010: DC E0 A3 9D DC E0 A3 9D DC E0 A3 9D DC E0 A3 9D	
UU2U: /9 18 U/ 51	
0030: 31 44 ED /A 31 44 ED /A 31 44 ED /A 31 44 ED /A 0040• EC 0E EE A8 EC 0E EE A8 EC 0E EE A8 EC 0E EE A8	
0050: 93 B6 A5 66 93 B6 A5 66 93 B6 A5 66 93 B6 A5 66	
0060: 57 2C F7 82 57 2C F7 82 57 2C F7 82 57 2C F7 82	
0070: 14 08 47 B1 14 08 47 B1 14 08 47 B1 14 08 47 B1	
0080: F4 71 E0 C8 F4 71 E0 C8 F4 71 E0 C8 F4 71 E0 C8	Save Log File
0090: <u>FF FF F3 01 6F 6F</u> 6F F3 01 FF 41 02 FF FF F7 E1	Clear Log File
Programmed and checked. OKI	Clear Log File
	Stop

Disconnect the device and connect the ESL connector

Write the dump to the EIS processor which has been generated and automatically saved before. Write the right dump version to the key processor. Write the dump with the written key to the ECU.

You may need to insert the key in the EIS several times(up to 32!) till the key is accepted. Normally you succeed the first time.

Return the key to the client.

6. Supplementary options

6.1. Writing a new key to the ECU

Sometimes you need to write a previously prepared new key dump to the ECU. Press Load in the Key field and load **the previously prepared** key dump to the program.

MBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line M200, W211, W219, W220, MC9912, MC60MC912 Load Save ODO 0912 0912 0912 0912 0912 New odo ESL/ESM ESL/ESM Help W211 Help W211 Calculate Calculate Help W211	Key-0 Key-1 Key-2 Key-3 Key-4
Key N2 v_1 is loaded: Load Save CCU 0000: 04 FC 00 C4 02 1B 51 F8 B7 28 54 01 3C 2B FA C9 Isometric from the form the for	Key-6 Key-7
0070: 9E DD 56 7A 93 49 C4 97 IB EA DZ ZE 61 7B 0D FF 0080: FF	

Load the ECU dump

MBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line W209,W211,W219,W220: MC9912, MC69MC912 The used keys. Load Save CPU ODO ESL/ESM Calculate 0 912 912 ESL ESL/ESM Load Save MOY -2 0 912 New odo ESM Help W211 Load Save 0.9.7.2	<pre>Key-0 Key-1 Key-2 Key-3 Key-4 Key-5</pre>
Key N2 v_1 is loaded: Load Save Cli 0000: 04 FC 00 C4 02 1B 51 F8 B7 28 54 01 3C 2B FA C9 ED(15-A000 (ST95P08) 0010: 66 41 3B 82 CE A4 EA 74 4D AC F7 FE 79 94 16 A2 ED(15-A600 (ST95P08) 0020: B1 41 61 9E C7 7D 2A 9F 3D 53 9C 9B D6 2D B1 26 EDC16-A641 (ST95320) 0030: D3 06 B8 89 DC 84 3B 2E 8F EF 64 E3 17 A8 C6 14 EDC16-A646 (ST95160) 0040: B2 2F 98 BD D7 0A E9 B2 90 9A 94 0A AF 0F AB 73 EDC16-A646 (ST95160) 0050: 0B FF E3 09 6E 0B AC 2A 65 74 74 62 E8 23 97 78 EDC16-A647 (ST95320) 0070: 9E DD 58 7A 93 49 C4 97 1B EA D2 2E 61 7B 0D FF EDC16-A648 (ST95160) 0080: FF	Key-5 Key-6 Key-7 All
ME 2.8 (ST95P08) Save Log File Clear Log File Stop	

MBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line W203_W211,W219,W220: MC9912,MC66HC912 Calculate Load Save CPU ODO ESL/ESM Calculate 0 912 09512 New ede ESM Ut + W111	The used keys. The blocked keys. Key-1 Key-2 Load Save Key-2 Key-3
Heip W211 Key N2 v_1 is loaded: 0000: 04 FC 00 C4 02 1B 51 F8 B7 28 54 01 3C 2B FA C9 0010: 66 41 3B 82 CE A4 EA 74 4D AC F7 FE 79 94 16 A2 0010: 61 41 C1 88 67 CF 7FE 79 94 16 A2	• - v.1 = Key-4 • - v.2 • Key-5 • - v.3 = Key-5 • Key-6 • Key-7 • Help • All
0030: D3 06 B8 89 DC 84 3B 2E 8F EF 64 E3 17 A8 C6 14 0040: B2 2F 98 BD D7 0A E9 B2 90 9A 94 0A AF 0F AB 73 0050: DB FF E3 09 6E 0B AC 2A 65 74 74 62 E8 23 97 78 0060: 09 14 54 6B D8 FC 59 55 14 79 6E E2 19 40 AB E2 0070: 9E DD 58 7A 93 49 C4 97 1B EA D2 2E 61 7B 0D FF 0080: FF	WDB2110061A694784 A 646 153 87 79 Calculate ECU Renew ECU
EEprom ST95160 (EDC16_A646) is loaded.	Save Log File Clear Log File Stop

In the circled windows you see the VIN-code and the factory number of the ECU. If the correct dump has been chosen while loading you will see the right VIN-code at the least. If the VIN-code field is empty you have chosen the wrong version while loading the file. Press **Calculate ECU**, you see

MBkeyprog-2 v1.0			
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line W203_W211,W211,W219,W220: MC9512,MC65HC010 The Load Save CPU ODO ESL/ESM Calculate W203_W211,W219,W220: MC9512,MC65HC010 Calculate The Load Save CPU ODO ESL/ESM Calculate W203_W211,W219,W220: MC9512,MC65HC010 ESL/ESM Est/Est/Est/Est/Est/Est/Est/Est/Est/Est/	used keys. blocked keys. Key-1 Key-2 Key-2 Key-3 Vey-4 Key-3 Key-4 Key-5		
Key N2 v_1 is loaded: 0000: 04 FC 00 C4 02 1B 51 F8 B7 28 54 01 3C 2B FA C9 0010: 66 41 3B 82 CE A4 EA 74 4D AC F7 FE 79 94 16 A2 0020: B1 41 61 9E C7 7D 2A 9F 3D 53 9C 9B D6 2D B1 26 0030: D3 06 B8 89 DC 84 3B 2E 8F EF 64 E3 17 A8 C6 14 0040: B2 2F 98 BD D7 0A E9 B2 90 9A 94 0A AF 0F AB 73 0050: 0B FF E3 09 6E 0B AC 2A 65 74 74 62 E8 23 97 78 0060: 09 14 54 6B D8 FC 59 55 14 79 6E E2 19 40 AB E2 0070: 9E DD 58 7A 93 49 C4 97 1B EA D2 2E 61 7B 0D FF 0080: FF	Save CU Help Key-6 2110061A694784 All 646 153 87 79 Calculate ECU Renew ECU		
EEprom ST95160 (EDC16_A646) is loaded.	Save Log File Clear Log File Stop		

In this case the new ECU dump is not saved automatically to the hard disk. You should press **Save** of the **ECU** field, the file will be saved with the initial name and _**New** added

6.2. Renew ECU.

If you have a dealer device **Star Diagnosis**, you can generate a new ECU dump on the original ECU dump to use it later with the help of the dealer device. In this case you needn't write the new keys to the ECU. You can also use another used ECU instead of the faulty ECU.

Press Renew ECU

MBkeyprog-2 v1.0	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line	
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line W203, W039, W215, W230 W06000900 Calculate Icoad Save ETL-64k.bin ESL/ESM Calculate W203 Repair ESL/ESM Help W203 Help W200	The used keys. The blocked keys. Load Save Convert Cade Save Convert Co
	Clear Log File Stop

You see anew window

-	Renew ECU	
Γo	ad ECU	
	VIN	VIN
	P/N	P/N
	Renew ECU	Help

MB	Renew ECU	
<u>L</u> oad ECU		
A000_E0	DC_24C04	
A000_E0	DC_95P08	VIN
A000_C	OMPR_29F400	
A030_M	E28_95P08	P/N
A111_O	OMPR_29F400	
A112_M	E28_95P08	Help
A113_M	E28_95P08	
A271 EI	DC 29F800	

Upon completion you see

Renew ECU	
Load ECU	
WDB2110061A694784 A 646 153 87 79	VIN P/N
Renew ECU	Help

In the circled windows you see the VIN-code and the factory number of the ECU. If the correct dump has been chose while loading you will see the right VIN-code at the least. If the VIN-code field is empty you have chosen the wrong version while loading the file. Press **Renew ECU** (in the small window). And after that close the window.

You see in the main window.

W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line Load Save ETL-64k.bin ESL/ESM Calculate • ESL • ESM Help W203 Repair ESL/ESM Help W220 A646, 647, 648 - EDC16: ST95160 is loaded. Successfully! ECU EEprom is updated and saved!	The used keys. The blocked keys. Load Save 0 - v.1 Cad Save 0 - v.2 - v.3 Load Save 0 - v.3 Load Save

The new dump is automatically saved in the initial directory of loading. _Renew is added to the initial name

6.3. The conversion of the key dump format.

With the help of our program you can converse the key dump format (version) correctly. To do so load a random dump version

MBkeyprog-2 v1.0		
W203_W220:908 W210_W220:05X32 W211_220:912 ESL/K-line W203_W211,W219,W220: MC9S12, MC9S12, MC9D12 The used keys. Load Save CPU ODO ESL/ESM Calculate The blocked keys.	☐ Key-0 ☐ Key-1 ☐ Key-2	
• 912 • ESL ESL/ESM • 9812 New odo • ESM Help W211	Key-2 Key-3 Key-4 Key-5	
Key N2 v_1 is loaded: Load Save ECU 0000: 04 FC 00 C4 02 1B 51 F8 B7 28 54 01 3C 2B FA C9 Image: Comparison of the second	☐ Key-6 ☐ Key-7 ☐ All	
0040: B2 2F 98 BD 07 0A E9 B2 90 9A 94 0A AF 0F AB 73 0050: 0B FF E3 09 6E 0B AC 2A 65 74 74 62 E8 23 97 78 0050: 09 FF E3 09 6E 0B AC 2A 65 74 74 62 E8 23 97 78 0050: 09 FF E3 09 6E 0B AC 2A 65 74 74 62 E8 23 97 78 0050: 09 FF E3 09 6E 0B AC 2A 65 74 74 62 E8 23 97 78 0050: 09 14 54 6B 08 FC 59 55 14 79 6E E2 19 40 AB E2 0070: 9E DD 58 7A 93 49 C4 97 1B EA D2 2E 61 7B 0D FF 0080: FF		
0090: FF		

In the window you can see the loaded dump version. Choose version for conversion and you see

MBkeyprog-2 v1.0			
W203 W220:908 W210 W220:05X32 W211 220:912 ESL/K-line			
1203, w639, w215, w220; mc6886908 Load Save ETL-64k.bin ESL/ESM Calculate		The used keys. The blocked keys. Key-1	
• ESL • ESM Help W203 Repair ESL/ESM Help W220		Load Save KEY-2	
		- v.2 - v.3	
0060: 09 14 54 6B D8 FC 59 55 14 79 6E E2 19 40 AB E2 0070: 9E DD 58 7A 93 49 C4 97 1B EA D2 2E 61 7B 0D FF 0080: FF	<u> </u>	Load Save BCU Key-7	
0090: FF			
0110: 3B 82 CE A4 EA 74 4D AC F7 FE 79 94 16 A2 B1 41 0120: 61 9E C7 7D 2A 9F 3D 53 9C 9B D6 2D B1 26 D3 06		P/N	
0130: B8 89 DC 84 3B 2E 8F EF 64 E3 17 A8 C6 14 B2 2F 0140: 98 BD D7 0A E9 B2 90 9A 94 0A AF 0F AB 73 0B FF 0150: E3 09 6E 0B AC 2A 65 74 74 62 E8 23 97 78 09 C2		Calculate ECU	
0160: DD 18 37 5E 11 34 44 74 7B 7B FF FF FF FF FF FF 0170: FF FF FF 49 C4 97 1B EA D2 2E 61 7B 0D FF FF FF 0180: FF FA 2B 3C 01		Save Log File	
0190: FF		Clear Log File	
	~	Stop	

Then press Save and save the new dump to the hard disk

6.4. Key type identification:

Always write the third version of the dump to NEC processor!

If you work with old type keys with Motorola processor you may encounter three different dump versions

Var 1: MA 567 880 011

000000 14 EC 00 66 11 BD 8D BE 63 F3 98 F5 62 67 B0 01 . .f.. С .bg.. 000010 23 45 67 89 AB CD EF EE 25 6B E2 F6 08 80 60 4E #Eq %**k** . `N 000020 D5 44 2C CF 53 BC 31 1E CB 95 2F 71 8F F9 7F BF D, S 1. /q .• 000030 28 38 59 90 53 E7 A9 2E 55 34 27 14 2C 40 AF 23 (8Y S .U4'.,@ # (jd r. . (oF 000040 14 2F DC A5 28 6A 64 E7 72 BD 89 0A 28 BC 6F 46 ./ 000050 81 81 CD 40 58 0B 4B 9E 5B 50 04 66 A5 11 AD 7C @X.K [P.f ..| 000060 92 0D 39 75 04 8F 9E F6 F6 7D 29 CF DC 4F F3 E7 .9u. }) 0 000070 FE 97 F7 7E A8 59 18 AB 8E 39 F2 43 16 7F 85 01 . 9 C.• ~ Y. 000080 01 01 01 23 3F 12 71 FF FF FF FF A7 B4 07 76 AC ...#?.q.... .v

Var 2: MA 567 880 021, MA 567 880 041, 656 167 20 70

000000 01 98 F3 63 BE 8D BD 11 66 B0 67 62 F5 01 23 45 . ..f.qb..#E С 000010 67 89 AB CD EF EE 25 6B E2 F6 08 80 60 4E D5 44 g %k . `N D 000020 2C CF 53 BC 31 1E CB 95 2F 71 8F F9 7F BF 28 38 , S 1. /q .• (8 000030 59 90 53 E7 A9 2E 55 34 27 14 2C 40 AF 23 14 2F Y S .U4'.,@ #./ 000040 DC A5 28 6A 64 E7 72 BD 89 0A 28 BC 6F 46 81 81 (jd r. . (oF @X.K [P.f ..| . 000050 CD 40 58 0B 4B 9E 5B 50 04 66 A5 11 AD 7C 92 0D 000060 39 75 04 8F 9E F6 F6 7D 29 CF DC 4F F3 E7 FE 97 9u. }) 0 . 000070 F7 7E A8 59 18 AB 8E 39 F2 43 16 7F 85 7B 78 8D ~ Y. 9 C.• {x 000080 D2 83 73 B7 69 0A AA A9 71 12 3F 23 B0 67 62 F5 q.?#.qb. s.i.

Var 3: MA 567 880 051, 654 367 2004

000000 01 98 F3 63 BE 8D BD 11 66 B0 67 62 F5 01 23 45 . С ..f.gb..#E 000010 67 89 AB CD EF EE 25 6B E2 F6 08 80 60 4E D5 44 g %k . `N D 000020 2C CF 53 BC 31 1E CB 95 2F 71 8F F9 7F BF 28 38 , S 1. /q .• (8 000030 59 90 53 E7 A9 2E 55 34 27 14 2C 40 AF 23 14 2F Y S .U4'.,@ #./ 000040 DC A5 28 6A 64 E7 72 BD 89 0A 28 BC 6F 46 81 81 (jd r. . (oF 000050 CD 40 58 0B 4B 9E 5B 50 04 66 A5 11 AD 7C 92 F2 @X.K [P.f ..| 000060 EE 7E 2B A9 58 BB EE 78 95 7F FF FF FF FF FF FF FF ~+ X х • 000070 FF FF A8 59 18 AB 8E 39 F2 43 16 7F 85 7C FF FF ... Y. 9 C.• |.. 000080 FF FF FF FF FF FF FF FF FF 71 12 3F 23 B0 67 62 F5q.?#.gb.

Attention! If you load, for example, the third version of the dump to the key with the first processor version the key will not work!