

Fxx 6WA Kombi Retrofit

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Abstract

This guide describes how to replace the standard KOMBI in BMW F07/10/11 cars with a used extended 6WA Kombi.

Disclaimer:

USE THIS GUIDE AT YOUR OWN RISK ! I'm not responsible for anything that could eventually go wrong. Follow all the steps carefully! The instructions are for KOMBI's with the 160D0WQ chip. For others, some steps might be different.

1 What you need

- a used 6WA KOMBI with a mileage LESS than your actual car mileage¹
- R270 EEPROM Programmer
- SOIC 8 Pin Testclip compatible with the R270
- Working E-Sys 3.22.5 with actual PSDZData (48.3 is OK) for FLASHING (no Token needed)
- Working E-Sys 3.18.4 for CODING (if you don't have a token for 3.22)
- E-Net to OBD cable that works with E-Sys
- A good car charger/power supply (12V/70A is recommended, although I used one with 20A).

2 Erasing the VIN in the used 6WA

2.1 Opening the KOMBI

1. Remove the 4 Torx-Screws from back cover (pic. 1)
2. remove the "Warranty Void Label" (of course, KOMBI warranty will be lost from now on)
3. carefully unclip the 5 securing clips (without breaking them), beginning with the 2 bottom ones (pic. 2)
4. remove the front cover (paying attention to the KOMBI Button which will fall off (simply put it back later on)

¹if you install a KOMBI with higher mileage, the CAS module in the car will likely update to this higher mileage, and there's no possibility to revert !!!

5. carefully unclip the back cover noses (one on the top, one on each side) and remove back cover (pic. 3)
6. very carefully unclip the flat-wire on the right (Flip the connector up by using a flat screwdriver, then slowly remove the wires). DON'T DAMAGE THE CONNECTOR OR THE WIRES. (pic. 4)
7. Separate the secondary board from the main board, simply by squeezing the white securing tips and pulling the secondary board upwards. Watch out not to stress the lower flat wires. (pic. 5)
8. unfold the secondary board
9. search the 8 Pin "160D0WQ" Chip on the mainboard (it's rather tiny) (pic. 6, the top one of the 2 SOIC 8 chips)

2.2 Erasing VIN on the 160D0WQ

1. Start the R270 Software (supposing you did install it correctly with all drivers before)
2. On the Main Screen, click on "MCU" and select "160D/35160". Click "OK" (pic. 8)
3. Connect the SOIC Tesclip to the 160D0WQ-Chip. (pic.7)
4. Click "Read" : the EEPROM should be read. If not, check the testclip position and orientation.
5. Save the unmodified BIN and make a backup copy to a safe place
6. Now erase the VIN
 - (a) Replace (**not insert !!!**) byte 70 0F (1 pair) with "FF" (long VIN)
 - (b) Replace all bytes from 80 00 to 80 0F (the whole line) with "FF" (long VIN)
 - (c) Replace bytes 590 0E and 590 0F (2 pairs) with "FF" (short VIN)
 - (d) Replace bytes 5A0 00 to 5A0 04 (5 pairs) with "FF" (short VIN) (pic.9)
 - (e) Save the modified BIN (choose a new filename)
 - (f) on the main screen, click on "WRITE". The modified BIN is now written to the EEPROM, and the data will be verified.
 - (g) Read the EEPROM again and check the modified bytes to be sure everything is ok.
7. Reassemble the KOMBI (be sure the flatwire is correctly fitted).

3 Bench-check the mileage

Before installing the KOMBI in the car, it's a good idea to check the mileage outside the car just to be sure the MILEAGE in the 6WA IS LOWER THAN THE ONE IN THE CAR.

1. Locate the large connector on the back of the KOMBI. (pic. 10)
2. The pins are labeled with small numbers.

3. Connect a 12V Power Supply so that PINS 1&2 are connected to +12V, pins 7&8 to GND(-). **Make sure the pins are well isolated from the neighbour pins!**
4. Turn on the Power Supply.
5. Press the KOMBI Button : the stored mileage is shown on the LCD. (pic.11)

4 Installing the 6WA into the car

4.1 Removing old KOMBI

This is an easy job. Just search YOUTUBE for "BMW Fxx remove cluster". This is the easiest way to see how it's done.

Remove the 2 attached connectors : one at the TOP (the HUD connector) and the large one on the back (on both, a tab has to be pressed before actually pulling the connectors).

4.2 Installing the 6WA

This is just the reverse of the removal procedure.

5 Flashing

This is the most critical part! Be careful that you follow all the steps correctly. Again, I will not be responsible for any faults that could occur to the car or anything else !!! Use the instructions at your own risk!

1. Hook up your car charger. **A suitable car charger is very important. Any power loss or low-voltage that could occur during flashing might corrupt your car software! Also, use a fast computer (I used an i5 3,6GHz / 16GB Ram iMac which worked fine).**
2. Connect E-Sys 3.22.5 to the car (when you used E-Sys 3.18 so far, uninstall it, then install 3.22.5. Later on, you can uninstall 3.22.5 again and reinstall 3.18.4)
3. Before you begin, in E-Sys, go to the Menu "Options" / "Settings..." and make sure "Update VCM after TAL execution" is CHECKED².
4. go to "COMFORT MODE" / "TAL-Calculating"
5. click Vehicle Order "Read".
6. click Vehicle Order "Save" Choose "newFA" as filename.
7. click Vehicle Order "Edit".
8. Expand the "FA" Folder, then "FZAuftrag", then "TYPE"

²This will write the new FA to the car after flashing. If you don't want this, UNcheck "Update VCM after TAL execution"

9. If "Zeitkriterium" of your car is anything below "0311", change "Zeitkriterium" to "0311" (since 6WA was available only from March 2011 on).
10. Click on "SALAPA-Element"
11. add "6WA" to the "SALAPA-Element List" and the PRESS CTRL-ENTER (or click the icon in the list header).
12. click on the SAVE Icon (the Disk) in the Top-Toolbar. (pic. 12)
13. click the "BACK" arrow in the Top-Toolbar (Select "YES" when prompted to reload Vehicle Order) to get back to the "COMFORT MODE/TAL Calculating" screen. (pic. 13)
14. Check if 0311 and 6WA were successfully changed in the FA-List.
15. Right-Click on "FA" and select "Activate FA".
16. In the "SVT Actual" section, click on "Read SVT".
17. In the "SVT Actual" section, click on "Save". Choose "SVT_IST" as filename.
18. In the "KIS/SVT Target" section, click on "Load" and load the just saved "SVT_IST" file.
19. In the "Calculation Strategy" (still in "KIS/SVT Target") section, choose "Complete Flash"
20. In the "KIS/SVT Target" section, select "I-Step (ship.)" : choose an I-Level matching the one from the 6WA (if you don't know it, choose an older I-Level)
21. In the "KIS/SVT Target" section, select the latest I-Level on "I-Step (target)".
22. In the "KIS/SVT Target" section, click on "Calculate"
23. In the "KIS/SVT Target" section, click on "Save". Choose "SVT_SOLL" as filename.
24. In the "TAL" Section, click on "Calculation".
25. In the "TAL" Section, click on "Save". Choose "newTAL" as filename.
26. Go to "Expert Mode" / "TAL Processing" (pic.14)
27. Click on the "..." button near the TAL-Line and select your "newTAL" file.
28. Click on the "..." button near the SVT-Line and select your "SVT_SOLL" file.
29. Click on the "..." button near the FA-Line and select your "newFA" file.
30. Click on "Read VIN"
31. Now UNCHECK all the "ALL" checkboxes. (**This is very important... not doing this will flash other ECU's beside KOMBI as well.**) Now, no checkbox at all should be ticked,
32. Make checkboxes in the KOMBI-Line : "blFlash" / "swDeploy" / "cdDeploy" / "ibaDeploy" (only those 4 and only the ones for KOMBI)

33. Click on "Check Software availability"
34. Now be sure again that E-Sys is well connected (e.g. that the connection has not been lost) and that the car charger is working, since the next step will begin the FLASHING PROCEDURE.
35. Click on "Start". Flashing should begin. During this, don't be afraid of certain noises or strange behaviour of the car that will occur . The process will take about 13 Minutes. Just before the end, the fuel pump will run at high speed... don't be afraid, this is OK! **Don't touch your computer and the car during the flash process !!!**. (pic.15)

6 Final steps

After the flash procedure, the KOMBI should reset and come back with no errors. (pic. 16) Now set the DATE and the TIME in your i-Drive Menu (else the Service-Interval will not work).

You might now reinstall E-Sys 3.18.4 to code your preferences to the 6WA (if you wish).

That's it ! The KOMBI should now show your old mileage and should fully work.

and one more time : **Be careful what you do! I'm not responsible for any fault or problem that might occur while using this guide.**

7 Write FA to the car

This is optional. The FA is automatically written to the car when "Update VCM after TAL execution" was ENABLED in step 3. If not, you can still write the new FA (or, for whatever reason, write back your original FA) following these steps:

1. in E-Sys, go to "Expert Mode" / "VCM"
2. Click on "... " in the "File"-Tab and load the FA you want to write to the car.
3. In the FA-Editor, right-click on "FA" and choose "calculate FP"
4. Click on the "VCM Master"-Tab (still in Expert Mode/VCM)
5. Click on "Write FA FP"

8 Credits...

... go to all members of the 6WA retrofit thread on <http://www.bimmerfest.com>. Special thanks to Shawns Sheridan and Hamfei. You can find the thread at :

<http://www.bimmerfest.com/forums/showthread.php?t=666531>

Guide written by Y. REISER

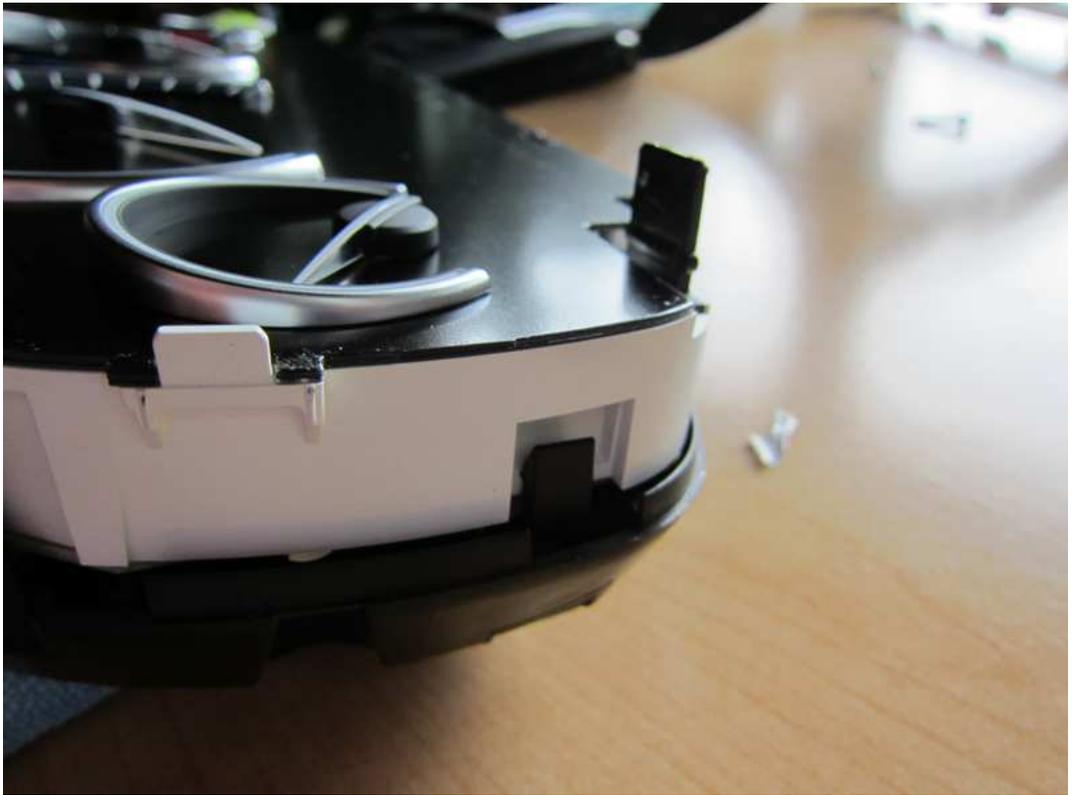
9 Pictures



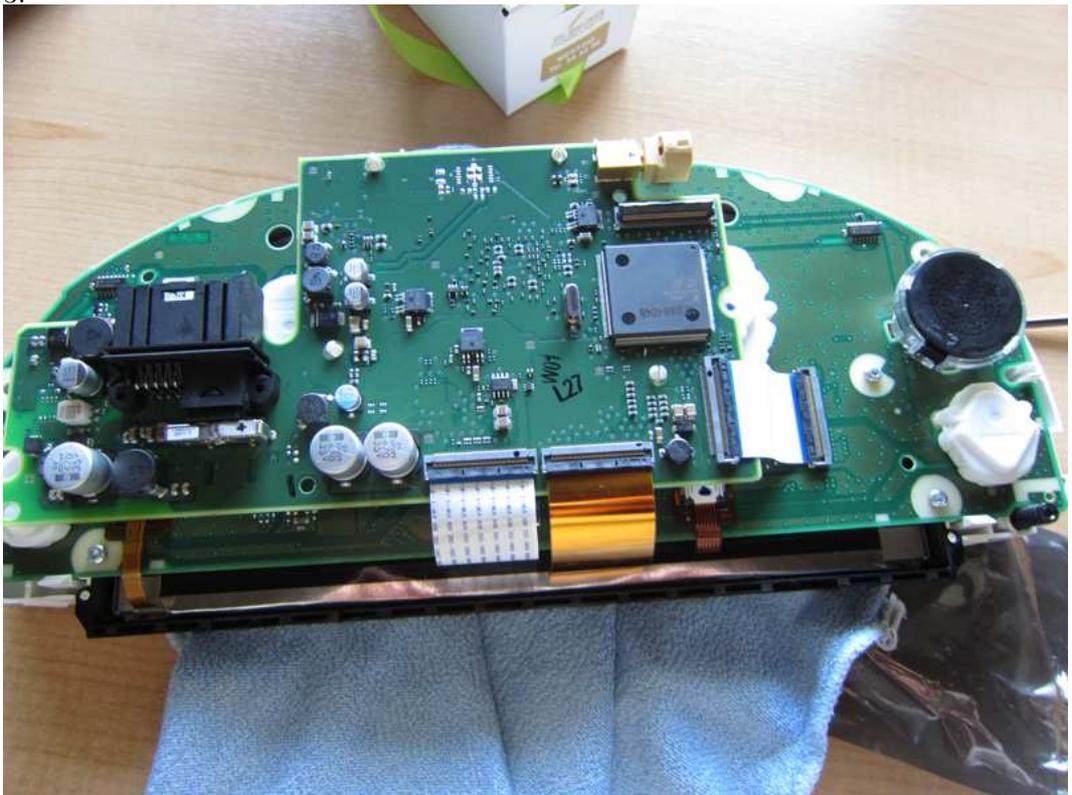
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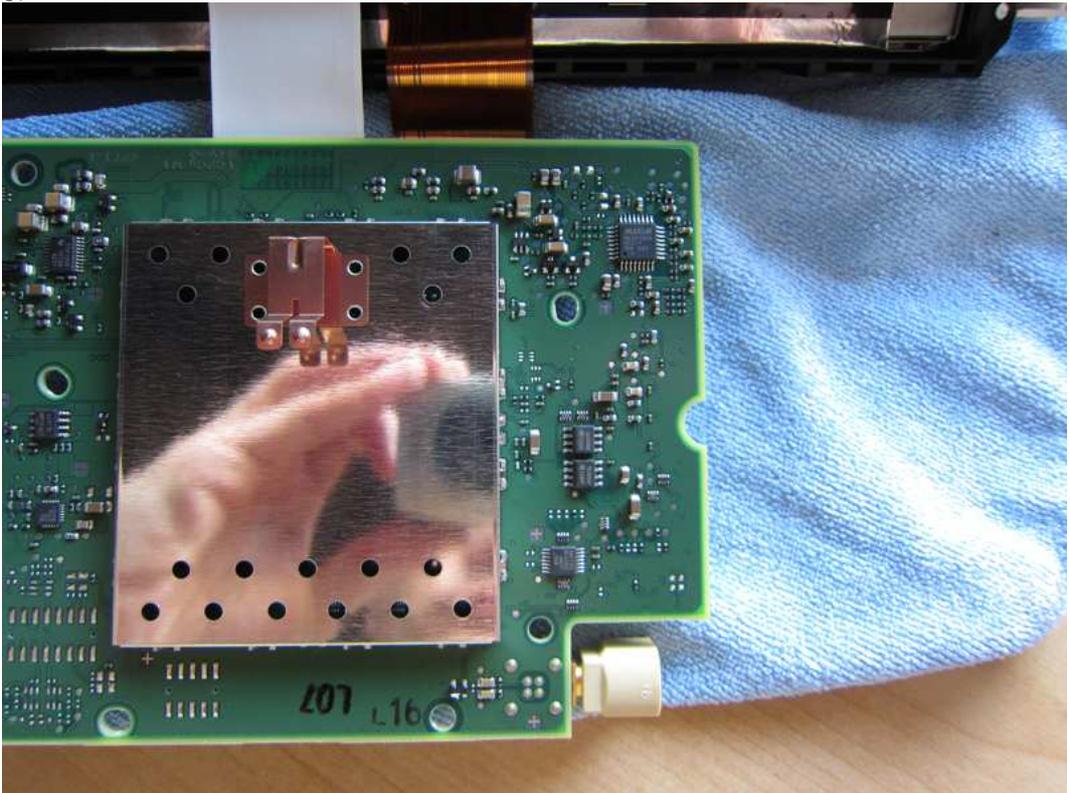
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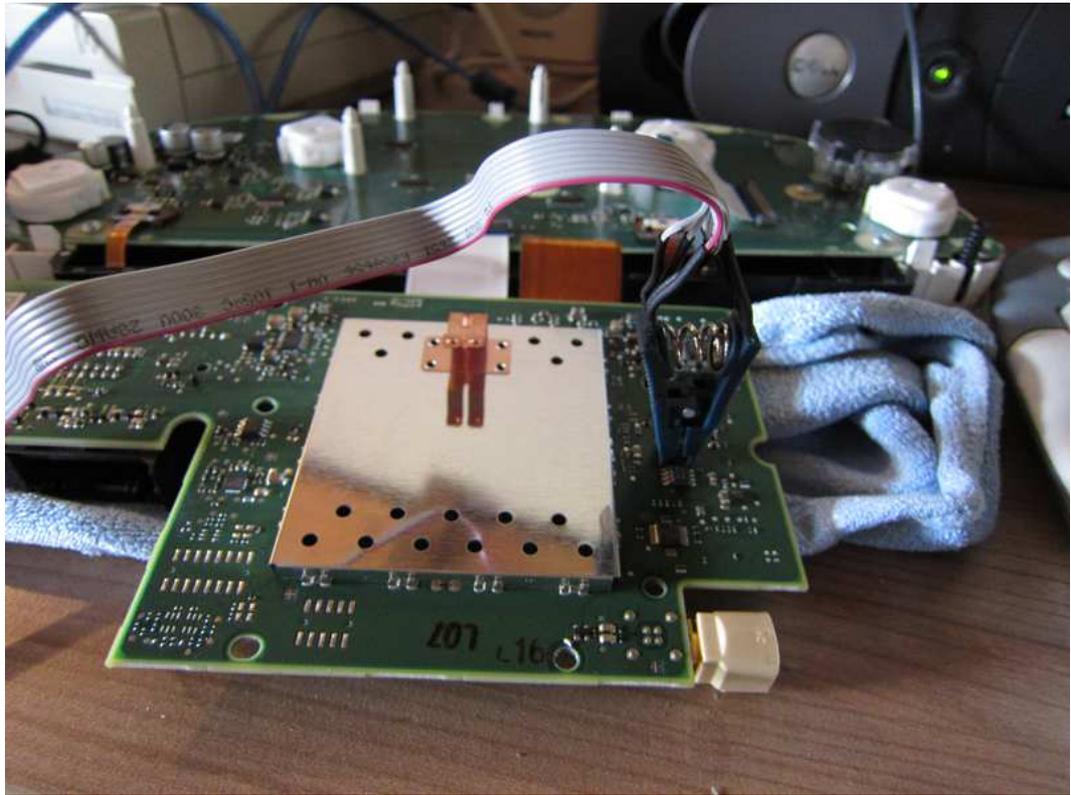
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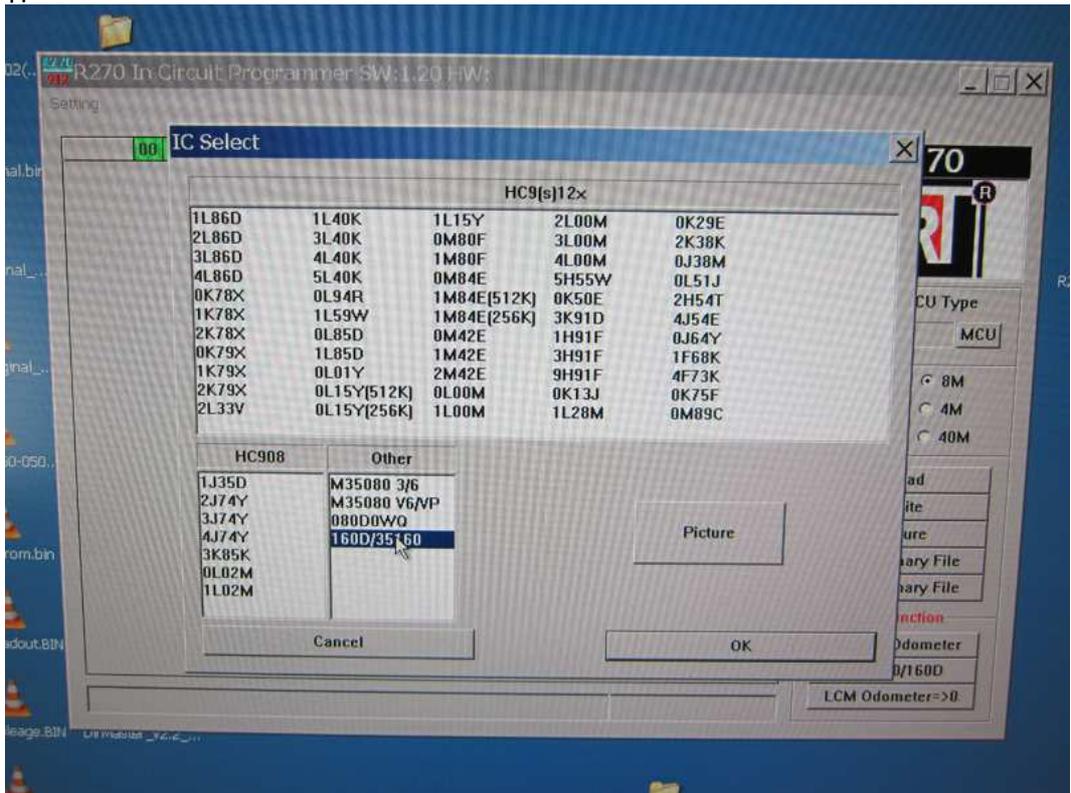
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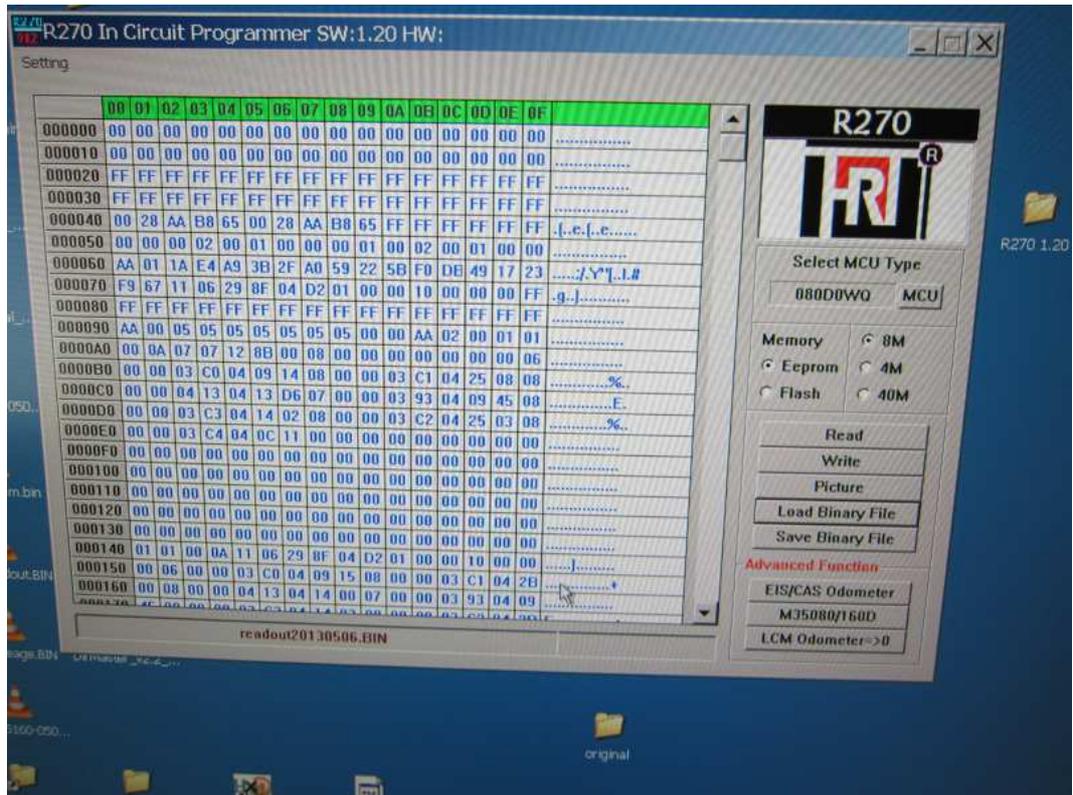
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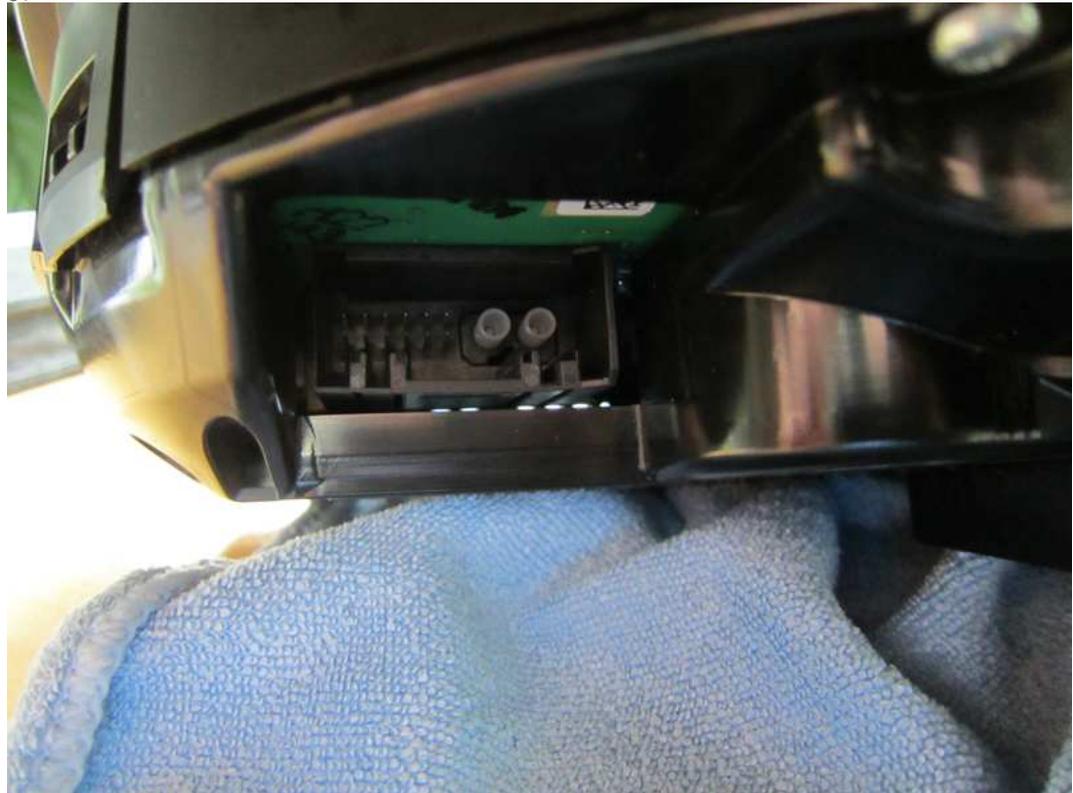
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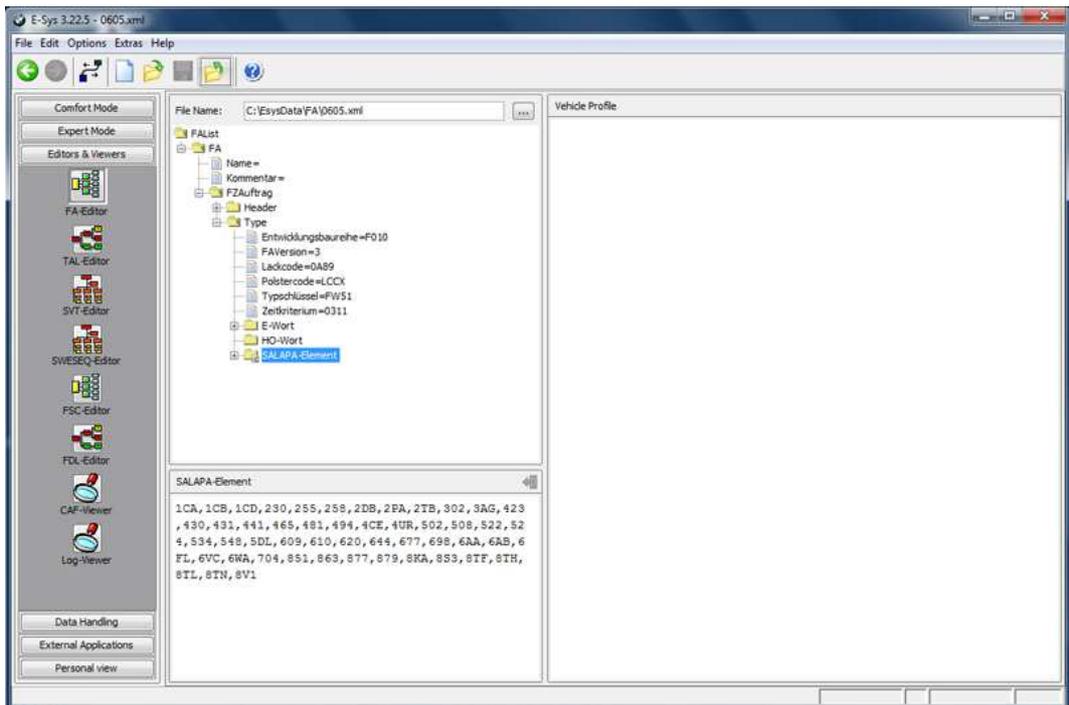
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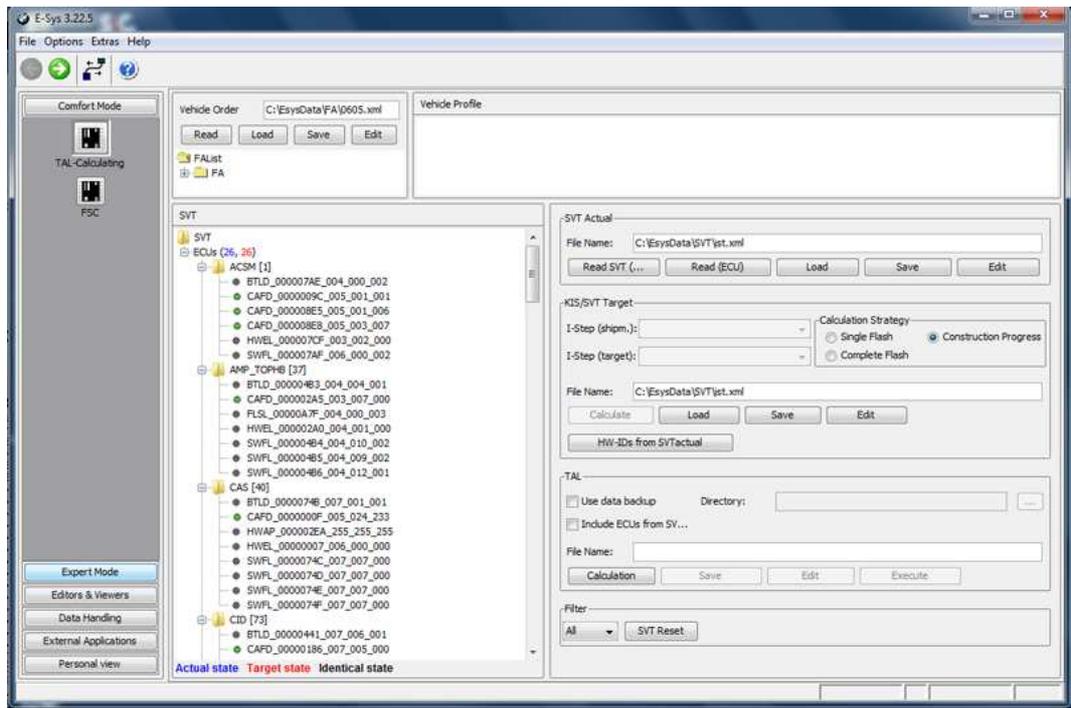
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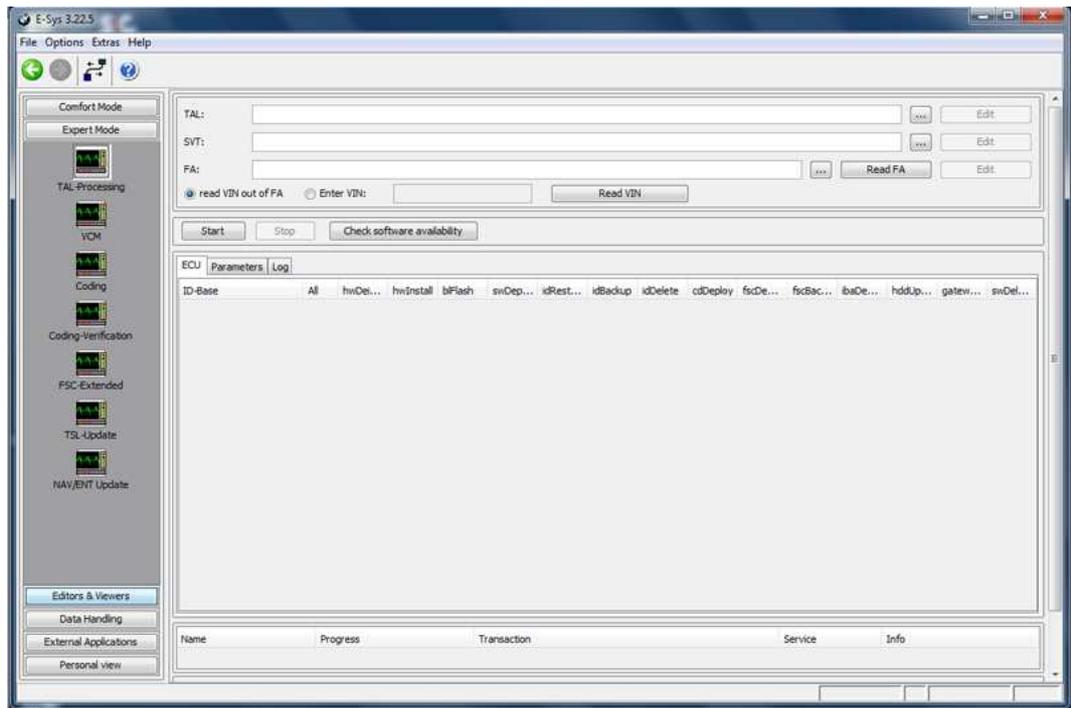
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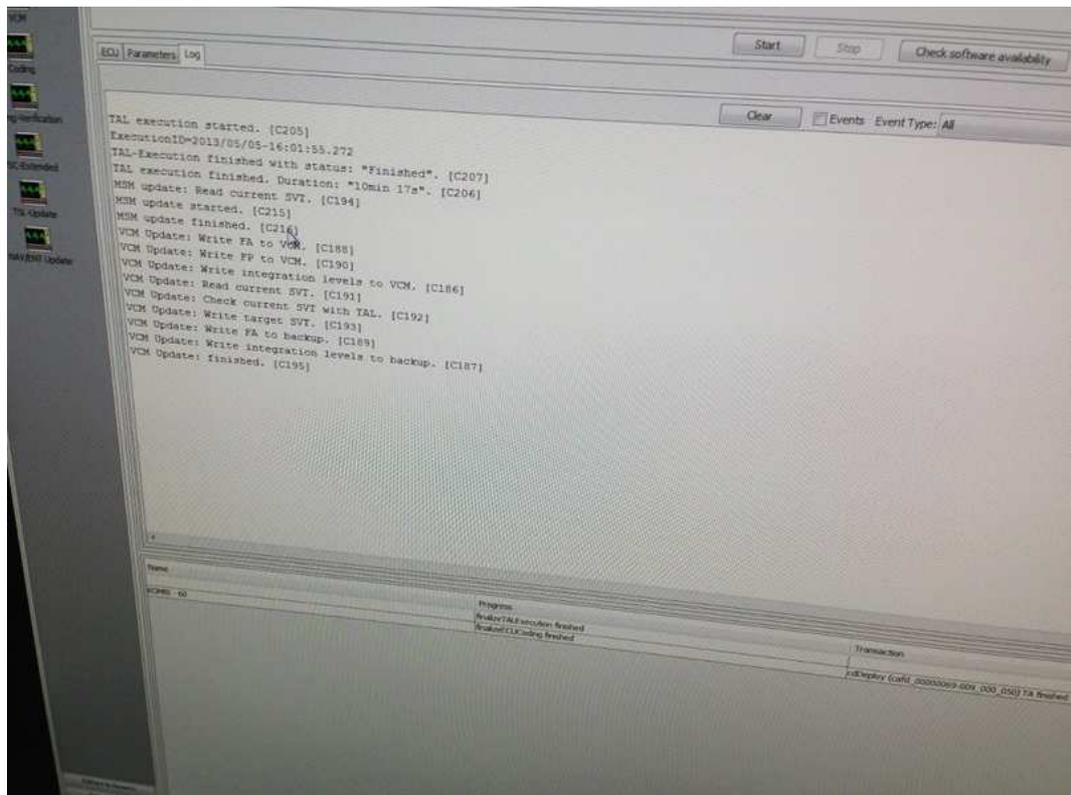
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16.