

E6x Sports Automatic Transmission Retrofit

Rev 1.0 April 2015

Summary of posts mostly from here:

<http://5series.net/forums/e60-parts-accessories-mods-22/sportautomatic-sat-retrofit-55056/>

hopefully given credit to the correct "posters"...

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Step 1: Read rsyed's original DIY:

[SAT DIY from rsyed from Austria.pdf](#)

Step 2: After the hardware is installed....

- Option 1 - Drive the car and enjoy most of the goodies. Your done.
- Option 2 - Code the car via NCS Expert
 - Change the VO to remove the automatic transmission \$205 and add the SAT \$2TB
 - Use the Expert profile and code KOMBI. Your done.

Other notes:

The trick here was to allow the SAT to work properly without the paddles. You changed the VO for SAT but didn't code everything. If your dealer codes your car for something else later, it will see the VO and code your car for the paddles and this will make your shifter think something is wrong and will disable the manual and DS shifting modes. What the dealer code will change is the EGS module and the only thing in there it will change is the value for paddles - turning them from PADDLES= wert_00 to PADDLES=wert_01. It will depend on the experience of your dealer tech on if they will know how to disable the paddles manually or not.

One might think the SZL also requires coding. I did code the SZL and compared the before and after and there were no changes.

KOMBI actually has quite a few changes.

A VO option for no paddles would be great to know. If anyone figures out if it exists or not please contribute and help improve this updated version of the DIY.

This was a great improvement to the car. Only after I drove it did I understand why others have so many great comments about the Sport Automatic.

Cheers!

Very important to make sure you have a good power supply connected with a voltage 13-14v, or instead do what I did by connecting jump leads from another car with the engine running. Also you must only program the EGS when the transmission is cold, the EGS electronics is within the transmission, if it's too hot after a hot run it may corrupt the data when you flash program it killing the module.

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FYI, when I added the SAT to my car, the default "Sport" button made my steering way too stiff, especially at stopped/low speeds.

Someone previously mentioned the following 2 values coded in the KGM control the stiff steering:

GESCHWIN_WERTE_SPORT_KGM

STROMWERTE_SPORT_KGM

Mine were set to 'wert_01'. I changed both to 'wert_03'.

Much, much better! Now at stopped/low speeds, you still get power steering assist. At higher speeds, the steering becomes much tighter. I think 'wert_01' practically disables all assist, even at a standstill. The KOMFORT (stock) value is 'wert_09'. I also tried 'wert_04', and could not tell a perceptible difference between non-Sport mode (wert_09).

Hope that helps some people who like me, hate the Sport button with a wert_01 setting.

Addy33 5 Series.Net

Fixed: I was coding with the .MAN file setting selected in NCSExpert. Once i switched to the profile with .MAN file un checked and then programmed via ncsexpert, the factory default coding was used. Since I had my CAS and LMA enabled with the right options, it automatically set the COMBI for SAT. Now i see SPORT when i press the button AND get Throttle Blips!

krbimmer bmwcoding.com

Let me share my experience with you.

I retrofited SAT on hardware change and coding change.

Great thanks to BERT69 and other members info.

My SAT retrofit history:

1) Just install M steering wheel and SAT gearbox -> most working, but paddle not working, no display 'sport'

2) Modify 2-wired connection based on BERT69 list. -> paddle not working, sport msg no.

3) Edit FA(S2TBA) list and retrofit coding CAS & LMA with expert profile. -> not working

4) Additionally, edit several modules and code again. -> paddle & sport msg working refer to below parameter changes on modules.

*1) One small error is the gear number does not change from M1~M6 to S1~S6 while pressing sport button, gear lever shift to left(DS), operating paddles.

*2) Several threads say maximum gear position is only upto 5th with sport-buttoned manual mode. My case is upto 6th like normal manual mode but functionwise I can feel the sport-buttoned manual mode.

Q) Is this because of not 'coding whole car' based on added FA list?

I did just CAS & LMA retroft coding with expert profile.

Thanks for reading. Michael

I took this comparison ~200KB FSW_PSW.TRC file between before and after SAT coding.

function parameter ECU before SAT after SAT

```
-----  
R_GANG_VON_LM ??? nicht_aktiv aktiv  
ANZ_SCHALTAUFFORDERUNG ??? nicht_aktiv aktiv  
GETRIEBE_2 ??? wert_01 wert_02  
GETRIEBETYP ??? egs dkg  
KLR_AUS_TIMEOUT CAS wert_02 wert_03  
KL30G_NACHLAUF_NACH_SZ1 CAS wert_00 wert_08  
ZEIT_KL50_ANSTRG CAS wert_04 wert_03  
ELV_AUT_FCT CAS nicht_aktiv aktiv  
ELV_RESET_FCT CAS nicht_aktiv aktiv  
PADDLES EGS wert_00 wert_01  
GESCHWIN_WERTE_SPORT_KGM KGM wert_01 wert_02  
STROMWERTE_SPORT_KGM KGM wert_01 wert_02  
FDC_VERBAUT KOMBI nicht_aktiv aktiv  
FDC_ID_MONITOR KOMBI nicht_aktiv aktiv
```

DZM_DAEMPfung KOMBI aktiv nicht_aktiv
DZM_DISP_RPM KOMBI wert_01 wert_02
DISP_ENGDAT_ALIVE_ZAEHLER KOMBI nicht_aktiv aktiv
DISP_ENGDAT_ID_MONITOR KOMBI nicht_aktiv aktiv
TORQUE_3_ID_MONITOR KOMBI aktiv nicht_aktiv
DISP_ENGDAT_SIG_MONITOR KOMBI nicht_aktiv aktiv
TORQUE_ENGDAT_SIG_MONITOR KOMBI aktiv nicht_aktiv

Final update!

When E60 LCI announced, a few models support SAT.

2TB supported model/engine type after research of GKE215.ATS and Realoem

525i N52 (NU51): No

530i N52 (NU91): Yes

530i N53 (ND71): Yes

535i N54 (NW13): Yes

530xi N52 (NV51): No

540i N62 (NW31): No

550i N62 (NW53): Yes

520d N47 (NX31): No

525d M57 (NX51): No

530d M57 (NX71): Yes

535d M57 (NX91): Yes

I chose ZB-Nr. of similar model/year to mine, NU91, then flashed and coded it..

- 1) install M steering wheel with paddle shift, gearbox and modify 2-wired connection
- 2) update ZB Nr. of EGS from 7601456 to 7603582 using winKFP in my model year case
- 3) add 2TB into VO, code CAS & LMA, process car using NCS
- 4) code back 2 parameters of KGM to normal for wheel stiffness using NCS

GESCHWIN_WERTE_SPORT_KGM wert_01

STROMWERTE_SPORT_KGM wert_01

*) Result: all SAT function working incl. sport message

– 6-speed sports automatic gearbox with steering wheel paddles and faster shift times*
(option for 530i/550i/530d/535d)

* Available from June 2007 production (further details will be published via the InfoNet)

source: BMW (UK) Ltd Product Marketing January 2007 Page 35

Hope to help anyone.

"GKE215.ATS"

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Here are the options available in the EGS module:

Paddles is the only value that gets changed as far as I know.

NIC

nicht_aktiv not active

* aktiv active

EL_INTERLOCK

aktiv active

* nicht_aktiv not active

PADDLES

* wert_00 value 00

wert_01 value 01

wert_02 value 02

SEAT

* wert_00 value 00

wert_01 value 01

OBD_PFC

* wert_00 value 00

wert_01 value 01

ISO_OBD

wert_01 value 01

wert_02 value 02

* wert_03 value 03

wert_04 value 04

MIL_SCAN_TOOL

* wert_01 value 01

wert_02 value 02

wert_03 value 03

wert_04 value 04

hermann 5 Series.Net

For yor information....

Stock option 205

Following ECU's will be flashed on teminal 15:

0x00 KGM60 9221109 Karosserie Gatewaymodul
0x12 DDE626 8509307 Dieselelektronik DDE 6 6
0x6D SMPLX1 9196933 Sitzmodul Fahrer
0x6E SMPLX1 9196933 Sitzmodul Beifahrer
0x70 LM460 9203082 Lichtmodul mit Adaptiver
0x78 IHKH60 9248708 Klimabedienteil
0x17 EKM260 7276382 Elektrische Kraftstoffpumpe
0x55 ULF2HI 9229740 Plattform MULF2-High
0x02 SZL360 9204508 Schaltzentrum Lenks?ule
0x5E **GWS60 9212217** Gangwahlschalter

Following ECU will be flashed on teminal 0:

0x40 CAS3 9237046 Car Access System 2 / 3

Delete 205 and add 2TB we have...

Following ECU's will be flashed on teminal 15:

0x00 KGM60 9221109 Karosserie Gatewaymodul
0x12 DDE626 8509307 Dieselelektronik DDE 6 6 Zylinder M57 T?2 TOP
0x6D SMPLX1 9196933 Sitzmodul Fahrer
0x6E SMPLX1 9196933 Sitzmodul Beifahrer
0x70 LM460 9203082 Lichtmodul mit Adaptiver Lichtsteuerung
0x78 IHKH60 9248708 Klimabedienteil
0x55 ULF2HI 9229740 Plattform MULF2-High
0x17 EKM260 7276382 Elektrische Kraftstoffpumpe 2. Generation
0x18 **GKE195 7592130** Getriebesteuerger?t GS19 D
0x02 SZL360 9204508 Schaltzentrum Lenks?ule

Following ECU will be flashed on teminal 0:

0x40 CAS3 9237046 Car Access System 2 / 3

Following ECU's must be replaced:

0x5E **GWSS60 9212220** Gangwahlschalter

leew88 5 Series.Net

1 Change your VO using NCS expert by removing \$205 (steptronic) from CAS/LMA and add \$2TB (SAT), then code this new VO to your KOMBI and EGS.

2. Using WINKFP flash your EGS to the \$2TB ZUB firmware, dangerous procedure you need to know what your doing in regards to stable voltage supply or you will end up with a dead module, Which ZUB is required depends on your model/EGS version etc. I might be able to guide you if can tell me more details of your car.

By just doing step 1 above will get you the "SPORT" display on cluster and heavier steering, Step 2 will give your 100% SAT mode ie faster shift, more aggressive throttle blip on downshift etc. It took me alot of guts to do this step but was well worth it in the end.

Biz77 5 Series.Net

Flashing the EGS with WinKFP was the easiest part of all this IMO. I do realize the inherent risk in doing that flash, but the process was quite simple.

So to add \$2TB to KOMBI, the process would be:

Open NCS Expert

Load Expertenmodus (OFFEN) profile - expertmode profile gives me an error as do many of the other profiles listed. I've been successful using expertenmodus (OFFEN) for everything else.

F1

F3

Select E60 Chassis

Select CAS module

F2 Enter FA

Select E60

Don't change anything in the FA, just click OK

F6 Back

F4 process ECU - Choose KOMBI

F2 Change Job

Select SG_Codieren

F3 Execute Job