Audi A4/S4 B6/8E VAG-COM Info

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Ross-Tech is not responsible for any damage or problems that may result from following these instructions. They are to be used at your own risk.

Dual K-Lines:
Depending on equipment level, the "new" Audi A4 can have so many control modules in it that putting them all on the same ISO9141 bus (K-Line) would exceed some of the electrical characteristics allowed by the spec. To get around this problem, the new A4 may have two K-lines. In "basic" cars, all control modules are on K1. In a car loaded with options, most control modules will be connected to K1 and will be accessible using all standard ISO9141 interfaces. However, a few modules may be connected to K2 instead of K1. We've heard from Europe that cars with Xenon headlights have the second K-line and cars without Xenon's don't, but we're not 100% sure this is is the the dividing line in North American cars.

The dealers' solution is to put a VAS-6017 adapter between the scan-tool and the car. This device acts as an intelligent switch, making an automatic determination which K-Line a control module is connected to. The VAS-6017 works fine with the interface adapters supplied with VAG-COM, but it is pricey, expect to pay over $200 if you want to buy one of these. Naturally, a less expensive solution is available to VAG-COM users. All of our current Interfaces fully support for the dual K-lines.

KWP-2000:
A number of the control modules in the new A4 use the new KWP-2000 protocols for the data-transport layer. KWP-2000 has some different features from the KWP-1281 protocol, see our Function Chart for details. You should use the latest version of VAG-COM for the most complete functionality.

Note:
The settings described below were tested on our 2002 development vehicle. Although VAG-COM works great with the 2003+ models, many of the coding and adaptation options may not work in the 2003 and newer models. If/when someone finds the 2003+ options, we'll gladly post them here.

Specific Modules:

01-Engine: K1 -- KWP-2000
VAG-COM works well on the 1.8T and 3.0 V6 offered in North America (with present limitations of KWP-2000 support). No testing has been done on any of the other engines offered in other markets.

02-Auto Trans : K1 -- KWP-2000
Tiptronic: VAG-COM is reported to work well.
Multitronic: Is also reported to work fine.

03-ABS Brakes: K1 -- KWP-1281
VAG-COM works fine

08-HVAC: K1 -- KWP-1281
VAG-COM Works fine

09-Elec. Ctrl. Mod. K1 – KWP1281
VAG-COM works fine.

```
Tweak:  Coding options for lighting   Coding is 000XY.

X=1 for Xenon Headlights,
X=0 for conventional Halogens.


   Country              DRLs:  Fogs w/o low beams:
Y=1  RDW (Rest of World) No     Yes
Y=2  NDL (Netherlands)   Yes    Yes
```

```
Y=3  USA                 No     No
Y=4  KAN (Canada)        Yes    Yes
Y=5  DAN (Denmark?)      Yes    Yes
Y=6  SON (Other?)        Yes    Yes
```

Fogs w/o low beams only appears to work on 2002 models. For 2003+ models, we know of no way to run the fogs without the low beams, except Canadian, which turns on Daytime Running Lamps (DRL's). We are not sure why there are so many Yes/Yes combinations; there must be some other features controller by this. The state of the Radio and Climate Control lighting is affected by this coding as well.

15-Airbags: K1 – KWP-2000
VAG-COM works well with present limitations of KWP-2000 support

16 – Steering Wheel K1 – KWP1281
VAG-COM appears to work fine.
Interesting to note that this module exists even in cars without any control buttons on the steering wheel.

17-Instruments: K1 -- KWP-1281
VAG-COM Works fine.

```
Tweak:
There are four lighting modes:
Mode 0:  Nothing lit until ext. light on
Mode 1:  Pointers lit all the time
Mode 2:  Scales lit all the time
Mode 3:  Pointers and Scales lit all the time
Mode is changed in Adapation Channel 19.   Standard value should be
11000 (or something close).  The first (left-most) digit is the
lighting mode.
```

22-AWD – Not applicable to any A4/A6/A8!
The quattro system in these cars is purely mechanical, no electronics at all. This address is used by the Haldex system used in transverse-engine cars like the TT, the A3, and various Golf/Bora models.

35-Cent. Locks: Not applicable. All functions moved to 46-Cent.Conv.

36-Driver's Seat: K2-KWP1281
VAG-COM appears to to work fine.

37-Navigation: Not tested. Expect to find it on K2.

45-Interior Monitor: K1 -- KWP-1281
VAG-COM Works fine.

```
Tweak:
Adaptation Channel 01 is sensitivity (default 100).
```

46 - Central Convenience: K1-- KWP1281
VAG-COM works well. We've had some problems with errors while getting the Door-Slave part numbers. If VAG-COM errors out while trying to display the information in the "Extra" fields, go to the Options Screen and set "Char Int" to 0.

There are numerous options/ features that can be set. These are controlled by the Coding and in Adaptation Channel 62. When we published a simple table, many people didn't understand it, so here's an explanation:

Let's look at Adaptation Channel 62 first (it is simpler, fewer bits than the Coding). The original value in a US 3.0L model is 95. Both a real VAG tool and VAG-COM display these values in decimal. 95 decimal is 5F hex,

or 01011111 in binary.

```
Value: 01011111
Bit:   76543210
```

Now we can correlate the bits with the chart
for Adaptation Channel 62:

```
State Bit  Dec.  Function
ON     0     1   windows up with remote
ON     1     2   windows down with remote
ON     2     4   windows up with key in lock
ON     3     8   windows down with key in lock
ON     4    16   sunroof close with remote
OFF    5    32   sunroof open with remote (does not appear to work)
ON     6    64   sunroof close with key in lock
OFF    7   128   sunroof open with key in lock (does not appear to work)
```

Also, you will see if we add up the decimal values for each of the bits that are ON, we can verify that we did it right because we got the original Adaptation value of 95.

```
1 + 2 + 4 + 8 + 16 + 64 = 95.
```

By now you're likely starting to wonder why "Windows with Remote" stuff doesn't work since the appropriate bits appear to be ON. To answer this question, we need to look at the coding the same way. The original coding in this car is 11788 (decimal). That's 2E0C in hex or 010111000001100 in binary. Again, we can again correlate the binary bits with the function table, just like we did above.

Central Convenience Controller Coding:

```
State Bit Dec. Function
OFF    0     1  Great Britain- alarm system (only with bit 4)
OFF    1     2  flash on when arming/unarming alarm system
ON     2     4  selective locking 1 door/all doors
ON     3     8  activate alarm system
OFF    4    16  rear unlocking block via speed
OFF    5    32  locking via speed
OFF    6    64  comfort functions with remote (adapt in ch 62!!)
OFF    7   128  right side steering
OFF    8   256  avant (glass break sensors in rear side-and rear
                  windows (if error: safe-LED constantly lit ))
ON     9   512  1x flash when lock with remote
ON    10  1024  horn sounds when lock with remote
ON    11  2048  door/window-logic ( ignition off: No open door
                  el. windows works 10 min )
OFF   12  4096  normal/????-alarm system
ON    13  8192  No SAFE-function USA only
OFF   14 16384  insulate-glass PR-nr 4KR/4KV
```

Again, we can verify that we did this correctly by adding up all the decimal values for the bits that are ON:

```
4 + 8 + 512 + 1024 + 2048 + 8192 = 11788.
```

Now notice that bit 6 with a value of 64 and function "comfort functions with remote (adapt in ch 62!!)" is OFF !!! So in order to turn this ON, we need to add 64 to the original coding. 11788 + 64 = 11852. Recode the module with that number. Once you do that, the options in Adaptation Channel 62 should take effect, and you can change the value there to "fine tune" the features..

If you wanted to add "locking via speed" (where the car locks itself as soon as you reach some low speed), you would add 32.

If you wanted to turn Selective Locking OFF, (so the entire car unlocks with one press of the unlock button on

the remote) you would subtract 4.

Hopefully this makes sense to everyone..:-)

55-Headlight Range: K2-KWP1281
VAG-COM Seems to work fine.
Note this controller is only present on cars with Xenon headlights.

56- Radio: K2 – KWP1281
VAG-COM appears to work fine, but we don't entirely trust any Audi Radio..:-)
We have not identified any tweaks at this time.