VAG-COM DIAGNOSTIC LOGGING FOR APR TUNED CARS

A. Vehicle Setup

- Air-conditioning OFF
- Traction control OFF
- Windows UP
- **Note:** If the car was using another octane of fuel (other than the octane to be tested) right before the testing is set to begin...Run the car until very near empty (5 miles or less until empty on trip computer to rid the fuel system of the previous octane of fuel. Then fill the car with 91 octane and drive the car for about 15 miles to rid the car of the last remnants of the previous octane. Only after this can testing begin.

B. RUN TYPE / DRIVING TECHNIQUE

Runs need to be at Wide-Open Throttle, 4th Gear, from 1500 rpm rolling start to redline (fuel shutoff).
Note: if too much speed in 4th gear is an issue, 3rd gear can be used but all runs need to be in the same gear at Wide-Open Throttle for the entire run between 1500 rpm and fuel shutoff.

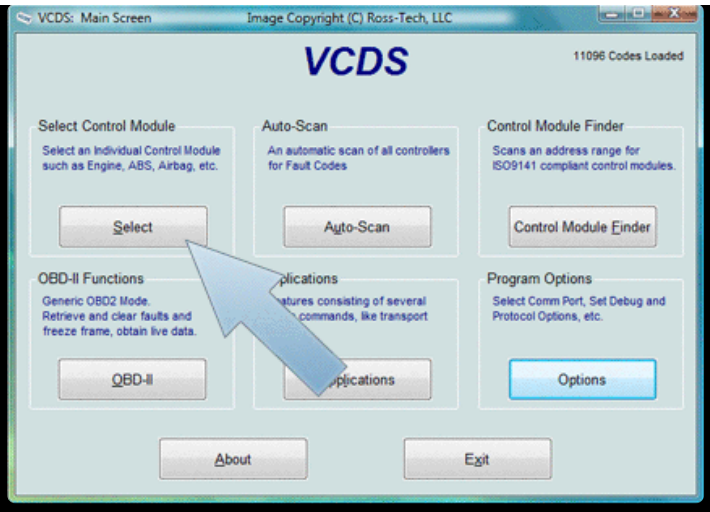
C. NUMBER OF RUNS NEEDED

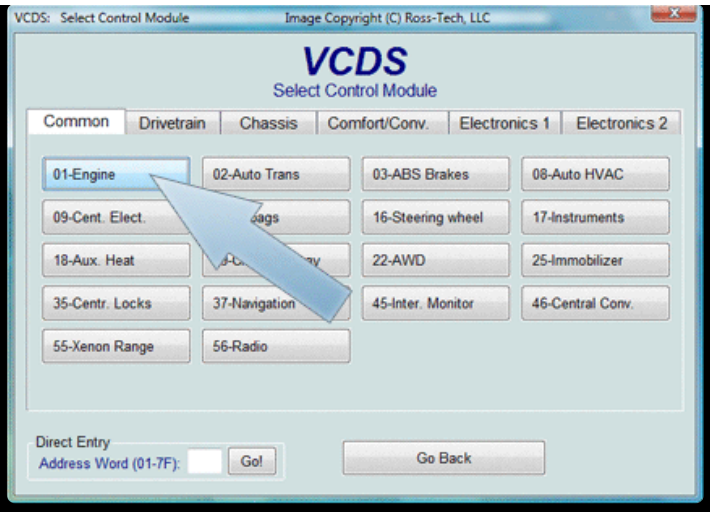
Minimum of 4 runs for the Vag-Com items I outlined below...one for each logging "round" as shown below in section "VAG-COM BLOCKS TO LOG".
Note: all runs should be done on the same stretch of road; the engine should be up to full operating temperature before logging; the cool down time needed between runs will be handled when the customer turns around to reposition himself for next run on the original stretch of road used for the first run.

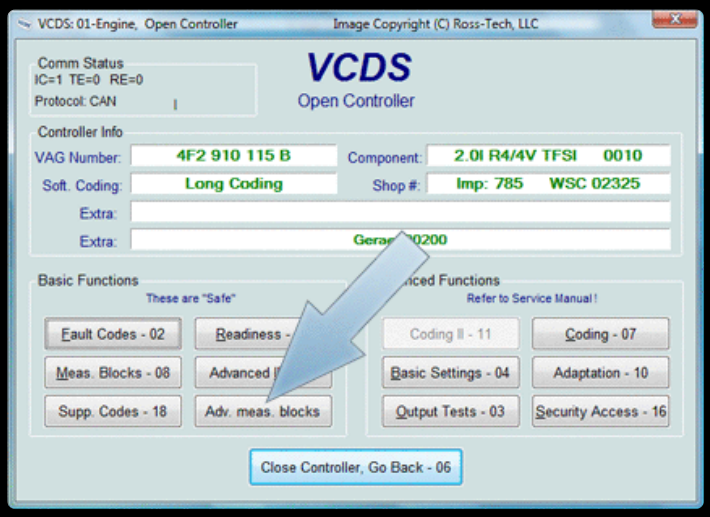
D. VAG-COM / COMPUTER SETUP:

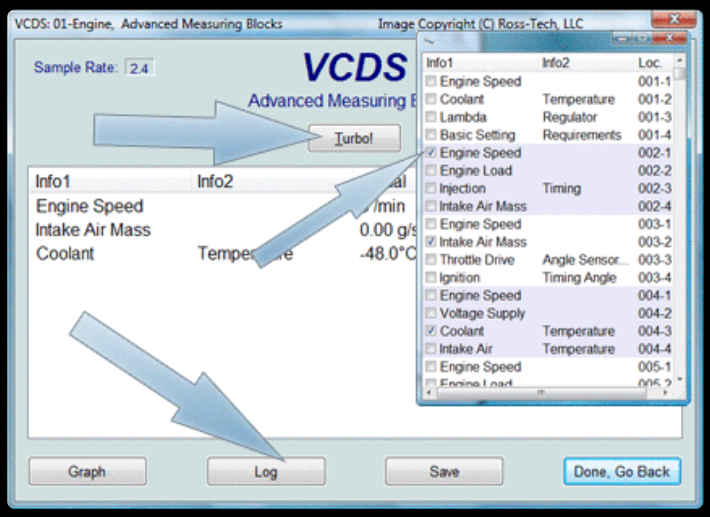
- The data should be logged using Advanced Measuring Blocks in the Engine Controller
- The "Turbo" mode should be activated to ensure a decent data sampling rate
- The data returned to APR should be in raw numerical form (not graphs). Vag-Com will export the data in a .csv format. This is what we need. Please have them title each file like "2006_B7_K04_91_oct_4thgear-wot_run1", "2006_B7_K04_91_oct_4thgear-wot_run2" and so forth.
- **Note:** If you data sample rate is low, expecially if you have no Turbo Mode option with the Micro Can cable, return to the home screen, click Options and change BLK INT to 25 and CHAR INT to 0.

Vag-Com Screen Shots









E. VAG-COM BLOCKS TO LOG:

Turbocharged Vehicles (2.0T FSI / 2.0TFSI / 2.0 TSI)

ROUND 1 LOGGING:
Use for Boost and Fueling Diagnosis

Item #	Vag-Com Block #	Description
1	001-1	Engine Speed
2	014-3	Misfire Sum
3	031-1	Lambda, Current Value
4	054-3	Accelerator Pedal Position
5	054-4	Throttle Plate Angle
6	101-3	Injection Timing (Median)
7*	103-1*	Current Fuel Pressure*
8	114-4	N75 Duty Cycle
9	115-3	Boost Pressure (Specified)
10	115-4	Boost Pressure (Actual)
11	230-1	Rail Pressure - Specified
12	230-2	Rail Pressure - Actual

ROUND 2 LOGGING:
Use for Boost and Timing Diagnosis

Item #	Vag-Com Block #	Description
1	001-1	Engine Speed
2	003-4	ignition Timing
3	020-1	Cylinder Ignition Angle Delay (cyl 1)
4	020-2	Cylinder Ignition Angle Delay (cyl 2)
5	020-3	Cylinder Ignition Angle Delay (cyl 3)
6	020-4	Cylinder Ignition Angle Delay (cyl 4)
7	031-1	Lambda, Current Value
8	054-3	Accelerator Pedal Position
9	101-3	Injection Timing (Median)
10	114-3	Engine Load (actual)
11	115-4	Boost Pressure (Actual)
12	230-2	Rail Pressure - Actual

*Not Applicable to EA888 TSI/TFSI Engines.

ROUND 3 LOGGING:
MAF/Load-Specific Diagnosis

Item #	Vag-Com Block #	Description
1	001-1	Engine Speed
2	003-2	Intake Air Mass
3	031-1	Lambda, Current Value
4	054-3	Accelerator Pedal Position
5	054-4	Throttle Plate Angle
6	101-3	Injection Timing (Median)
7*	103-1*	Current Fuel Pressure*
8	114-1	Engine Load (specified)
9	114-3	Engine Load (actual)
10	115-3	Boost Pressure (Specified)
11	115-4	Boost Pressure (Actual)
12	230-2	Rail Pressure - Actual

*Not Applicable to EA888 TSI/TFSI Engines.

ROUND 4 LOGGING:
Misfire-Specific Diagnosis

Item #	Vag-Com Block #	Description
1	001-1	Engine Speed
2	003-2	Intake Air Mass
3	015-1	Misfire Cyl 1
4	015-2	Misfire Cyl 2
5	015-3	Misfire Cyl 3
6	016-1	Misfire Cyl 4
7	054-3	Accelerator Pedal Position
8	054-4	Throttle Plate Angle
9	101-3	Injection Timing (Median)
10	115-3	Boost Pressure (Specified)
11	115-4	Boost Pressure (Actual)
12	230-2	Rail Pressure - Actual

ROUND 5 LOGGING:
Use for Boost and Timing

Item #	Vag-Com Block #	Description
1	001-1	Engine Speed
2	003-2	Intake Air Mass
3	003-4	ignition Timing
4	020-1	Cylinder Ignition Angle Delay (cyl 1)
5	020-2	Cylinder Ignition Angle Delay (cyl 2)
6	020-3	Cylinder Ignition Angle Delay (cyl 3)
7	020-4	Cylinder Ignition Angle Delay (cyl 4)
8	031-1	Lambda, Current Value
9	054-4	Throttle Plate Angle
10	114-4	N75 Duty Cycle
11	115-3	Boost Pressure (Specified)
12	115-4	Boost Pressure (Actual)

Supercharged Vehicles (3.0 TFSI)

General Logging Blocks:
Use blocks from the list below as instructed

Item #	VCDS Block #	Description	Typical Stock Reported Value *Values Depend on Engine Load, Ambient Conditions and other Variables.*	Typical Stage I Reported Value *Depend on Engine Load, Ambient Conditions and other Variables.*
1	22	Throttle Position		
2	24	Accelerator Position		
3	33	Long Term Fuel Trim Bank 1		
4	34	Long Term Fuel Trim Bank 2		
5	35	Engine Speed	Redline = 7,200 RPM	Redline = 7,200 RPM
6	128	Ambient Pressure		
7	292	Timing Retard Cyl 1		

8	293	Timing Retard Cyl 2		
9	294	Timing Retard Cyl 3		
10	295	Timing Retard Cyl 4		
11	296	Timing Retard Cyl 5		
12	297	Timing Retard Cyl 6		
13	298	Ignition Angle		
14	421	Mass Air Flow	Peak = 920kg/h (Will Vary +/- 20)	Peak = 1160kg/h (Will Vary +/- 20)
15	436	Boost Pressure (absolute)	Peak = .8bar Redline = .5bar	Peak = .86bar Redline = .86bar
16	632	Intake Air Temperature		
17	702	Boost Control Valve Angle	Begins to Open at 3,500 RPM Redline = 28%.	0%

Naturally Aspirated Vehicles (2.5L, 3.2L)

ROUND 1 LOGGING: GENERAL

Item #	Vag-Com Block #	Description
1	001-1	Engine Speed
2	001-2	Coolant Temp
3	003-2	Intake Air Mass
4	003-4	Ignition Timing
5	011-3	Intake Air Temp
6	031-1	Lambda, Current Value
7	031-2	Lambda, Specified Value
8	054-3	Accelerator Pedal Position
9	054-4	Throttle Plate Angle
10	101-3	Injection Timing (Median)
11	114-1	Engine Load (specified)
12	114-3	Engine Load (actual)

ROUND 2 LOGGING: DETAILED TIMING

Item #	Vag-Com Block #	Description
1	001-1	Engine Speed
2	003-4	Ignition Timing
3	020-1	Cylinder Ignition Angle Delay (cyl 1)
4	020-2	Cylinder Ignition Angle Delay (cyl 2)
5	020-3	Cylinder Ignition Angle Delay (cyl 3)
6	020-4	Cylinder Ignition Angle Delay (cyl 4)
7	031-1	Lambda, Current Value
8	031-2	Lambda, Specified Value
9	054-3	Accelerator Pedal Position
10	112-4	Median Exhaust Temp
11	114-1	Engine Load (specified)
12	114-3	Engine Load (actual)

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