VCDS Release 805
PDF Manual Printing Instructions:

Print ⊠

Printer
Name: Dell Color Laser 5110cn PCL6 ▼ Properties
Status: Ready
Type: Dell Color Laser 5110cn PCL6
Comments and Forms:
Document and Markups ▼

Print Range
◉ All
○ Current view
○ Current page
○ Pages 1 - 88
Subset: All pages in range ▼
☐ Reverse pages

Page Handling
Copies: 1 ⬍ ☑ Collate
Page Scaling: Fit to Printable Area ▼
☑ Auto-Rotate and Center
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☐ Print to file

Printing Tips Advanced

Preview: Composite
⟵——— 8.5 ———⟶

Ross-Tech

VCDS

User's Manual
Diagnostic Software for
VW/Audi/SEAT/Skoda
Release 805

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by Ross-Tech, LLC
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Lansdale, PA 19446
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www.Ross-Tech.com

11

Units: Inches   Zoom: 125%

1/88 (1)

OK   Cancel

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VCDS
™
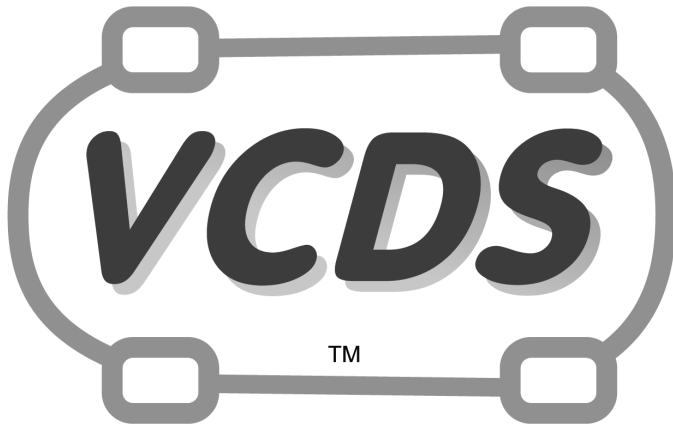
User's Manual

**Diagnostic Software for
VW/Audi/SEAT/Skoda**

Release 805

**Copyright (c) 2000-2008
by Ross-Tech, LLC.
881 Sumneytown Pike
Lansdale, PA 19446
+1-267-638-2300
www.Ross-Tech.com**

VCDS *Table of Contents*

Thank you for purchasing VCDS, which allows you to turn a Windows PC into a powerful diagnostic tool for VW/Audi/SEAT/Skoda vehicles from 1990 through the latest models.

STOP Read This First! STOP

Before plugging anything in, you must first install VCDS software on your PC.

Step #1

Go to our website and click on Download at the top of the screen to download and install the latest version of VCDS: **www.Ross-Tech.com**

Run the installation file that you have downloaded and follow the onscreen instructions and allow VCDS to install in its default directory. ►

Welcome to the VCDS Setup Wizard

This wizard will guide you through the installation of VCDS

Towards the end of this installation, you'll also be offered the opportunity to pre-install device drivers for your interface hardware.

Click Next to continue.

Next >   Cancel

The VCDS Pro-Kit comes with a CD containing our software as well. If possible it is always a good idea to download the latest version from our website.

USB   Serial

-OR-
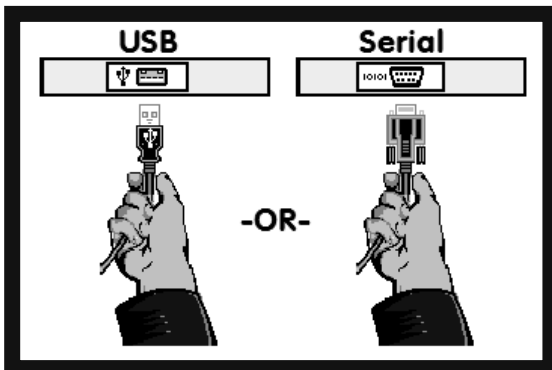
◄Step #2

Connect the Serial end of your Serial Interface or the USB end of your USB Interface to the correct port on your PC. If your PC is further from the vehicle's diagnostic port than 6 feet, connect an approved Extension Cable between the PC and the Interface. The appropriate extension is included in the Pro-Kit and additional ones are available from our web store.

Step #3 (USB Only) ▶

If you are using a Serial Interface then you can proceed to step #4. If you are using a USB Interface, a message like this should pop up: ▶

Click on the Found New Hardware message and the Found New Hardware Wizard should start up. If you are prompted with the choice, pick "No, Not This Time" when asked if you want to connect to the Internet to search for drivers. Select "Install the software automatically (Recommended)" then click **[Next >]**

The process should be automated but you may need to click "Continue Anyway" part way through the process. If you are using Windows 98/ME then you should follow the USB Driver Installation Instructions that should automatically pop up on your screen.

If, for some reason, you installed the USB Interface without following the above instructions, and VCDS does not work correctly, go into your PC's Device Manager while the USB Interface is connected.

You can find the Device Manager by right-clicking on My Computer in XP or on Computer in Vista. Select Manage to bring up Computer Management. On the left side of the screen under System Tools, select Device Manager.

Find the "VCDS Compatible USB Interface" and delete it. It may be under "Other Devices" or under "Universal Serial Bus Controllers". Next, unplug the USB Interface from your PC, wait 5 seconds and plug it back in. Proceed with the installation starting on Step 2.

Step #4 ▶

Connect the car end of your Interface to your vehicle's Diagnostic Port. ▶
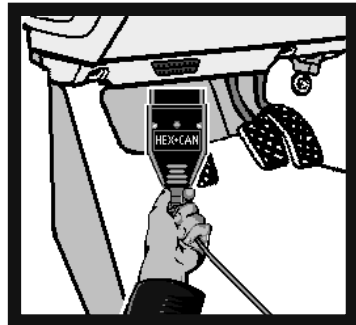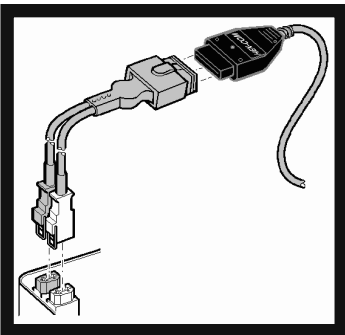
◀ If your vehicle has a 2x2 port (some pre-1996 vehicles), then use the optional 2x2 Adapter between the Interface and the ports in the car. This is included in the Pro-Kit.

Turn the vehicle's ignition switch to the ON position. Make sure the key is turned far enough that the dash lights are fully illuminated. The engine may either be running or stopped.

Step #5 ►

Start the VCDS program on your PC through either the Start Menu or the icon on your Desktop.

◄ Step #6

From the Main Screen in VCDS click the **[Options]** button to go into the Options screen.

Step #7►

Once you are in the Options Screen, Select the correct port for your PC's Serial Port (typically COM1 or COM2) or USB Port (USB) and click the **[Test]** button. Ensure that VCDS finds your interface.

Step #8

You should see a message like the one above.

- If the Interface Status is "Not Found!" check the connections at the car and PC. Make sure both are plugged in securely. Serial Interfaces get their power from the vehicle so they will not be recognized at all if not plugged into the car.
- Adapter Type should always be "Ross-Tech" followed by the name of the Interface.
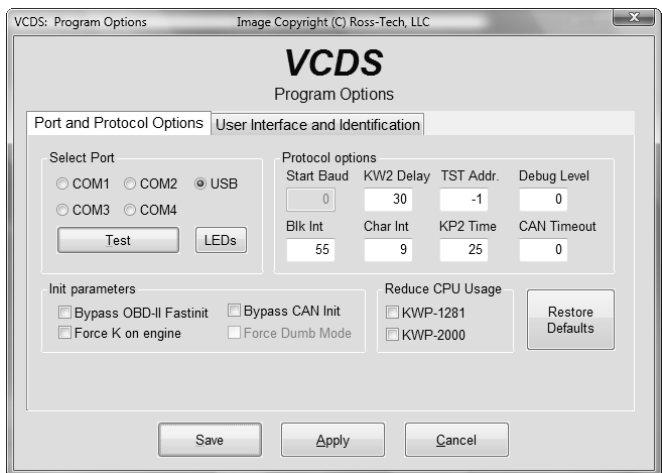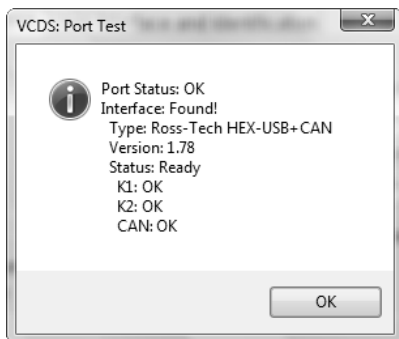- Version indicates the firmware version of your Interface. It may be updated by new versions of VCDS, if so follow the prompts on the screen.
- For the HEX-COM+CAN and HEX-USB+CAN Interfaces, K1 and K2 should say OK as shown above. CAN status indicates whether or not the vehicle uses CAN-Bus for diagnostics and will only say OK with CAN-compatible interfaces that are plugged into a CAN-compatible vehicle with the ignition turned on. For the Micro-CAN Interfaces, K1 and K2 should show "Not Supported" while CAN should say OK. For the KEY-COM and KEY-USB as well as with the older HEX-COM and HEX-USB, K1 and K2 should both be OK while CAN should say "Not Supported". If K1 or K2 status are "Short to Ground" or "Short to +12V" then you may have a short or an open circuit in the car's diagnostic port, often caused by the Aftermarket Radio Problem, See the Aftermarket Radio page for more info:

  http://www.ross-tech.com/vag-com/aftermarket-radio.html

Once you have tested successfully, click **[OK]** then click **[Save]** to apply this configuration, you will be returned to the Main Screen.

Click on **[Select]** to view the Select Control Module Screen. Select one of your car's Control Modules such as Engine.

Note: Your car will not have all the Control Modules listed in VCDS, only the functional ones that were installed in your vehicle. See the Applications Page for your car on our Website for more info: **www.Ross-Tech.com/vag-com/cars/applications/**

After VCDS has connected, click on **[Fault Codes]** to check for Fault Codes (DTCs). Repeat the process for each of your car's Control Modules. If you encounter problems, see the FAQ on our website first: **http://www.ross-tech.com/vag-com/vag-com-faq.html**

If you still have problems, feel free to contact us with full details about your PC and vehicle, preferably while you are in front of both:

Ross-Tech, LLC   support@ross-tech.com   Tel: +1 267-638-2300

VCDS - Main Screen - Section 2-A
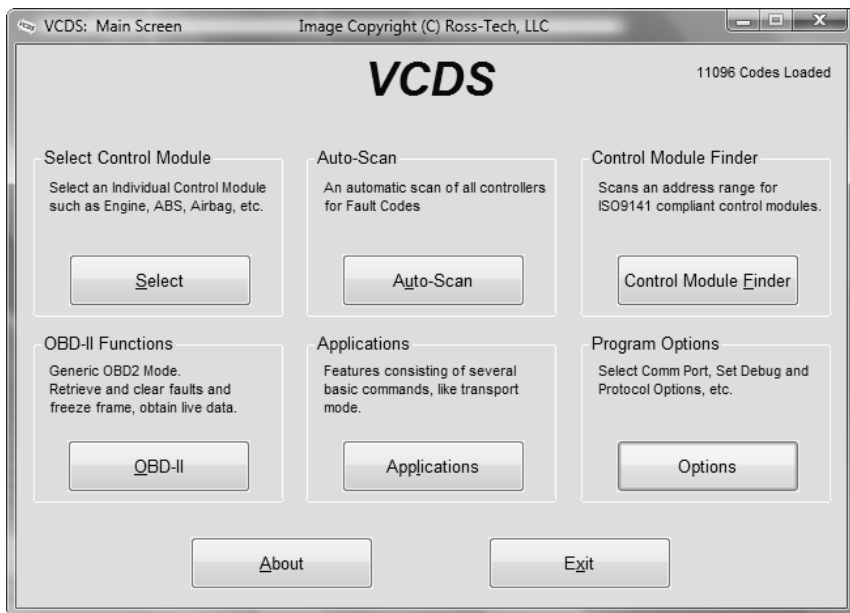
This screen appears when you start VCDS by clicking the shortcut on your Desktop or by selecting VCDS from the Start Menu. These screen-shots were taken using Microsoft Windows Vista with the "Aero" style. If you are not using Vista Aero, expect the screens to look different but the functions will be the same.

On this screen, you have 8 buttons that you can click:

[Select]

[Auto-Scan]   (see Section 21 of this manual)

[Control Module Finder]   (see Section 22 of this manual)

[OBD-II]   (see Section 23 of this manual)

[Applications]   (see Section 24 of this manual)

[Options]   (see Section 30 of this manual)

[About]   (see Section 31 of this manual)

Each of the above buttons is described in its own section in this manual.

[Exit] (This closes the VCDS program)

| VCDS: Select Control Module | Image Copyright (C) Ross-Tech, LLC | ✕ |

VCDS
Select Control Module

| Common | Drivetrain | Chassis | Comfort/Conv. | Electronics 1 | Electronics 2 |

01-Engine	02-Auto Trans	03-ABS Brakes	08-Auto HVAC
09-Cent. Elect.	15-Airbags	16-Steering wheel	17-Instruments
18-Aux. Heat	19-CAN Gateway	22-AWD	25-Immobilizer
35-Centr. Locks	37-Navigation	45-Inter. Monitor	46-Central Conv.
55-Xenon Range	56-Radio		

Direct Entry
Address Word (01-7F): [   ] Go!   Go Back

The various computers in the car are called "Control Modules" or "Controllers". On this screen, you select which Control Module you want to "talk" to. To establish communications with a particular Control Module, simply click on the appropriate button. For example, click on the button for **[01 – Engine]** to connect to the engine controller. VCDS has buttons for all control module addresses currently supported by the factory diagnostic tools.

Module Tabs
Each tab on the top of this screen contains a number of different controllers grouped by category: **Common, Drivetrain, Chassis, Comfort/Conv., Electronics 1,** and **Electronics 2.** Each possible controller is listed as a number and a description, i.e., **[01-Engine]**. The number corresponds to the controller number that you'd find in your Factory Repair Manual in the instructions for using a VAG-1551 or other factory diagnostic tool.

Direct Entry
You can also enter any address manually. Simply put in the address and click **[Go!]**

To return to the Main Screen, click **[Go Back]**

Note: Your car will not have all the Control Modules listed in VCDS, only the ones that were installed in your vehicle. See the Applications Page for your car on our Website for more info:

🌐 **www.Ross-Tech.com/vag-com/cars/applications/**

VCDS - Open Controller- Section 4-A

This screen will appear when VCDS is establishing communications with any of the Control Modules shown on the Select Control Module screen.

Comm Status Shows the status of the current communications session. Once communications have been established:

- **IC=** Shows the number of times the session has been initialized. If IC increases beyond 1, communications are less than 100% reliable.

- **TE=** is a counter of transmitter errors within individual packets. TE greater than 0 can indicate unreliable communication.

- **RE=** is a counter of receive errors within individual packets. RE greater than 0 can indicate unreliable communication.

- **Protocol** indicates whether the controller speaks **KWP-1281** , **KWP-2000** , **CAN, or UDS**. (See the Function Chart in Section 36 in this manual for more information).

- A rotating cursor shows that communication is active.

Controller Info
Once the communications session has been established, all of the Control Module's "Identification" data is presented here.

- **VAG Number** is the VW/Audi part number for this controller. All of the digits, both numbers and letters, make up the part number. In some cases this number may be different from the number on the sticker on the module itself, specifically if the module has been reflashed by a dealer per a service campaign.

- **Component** contains more identification information about the controller and may contain a version number for the controller's internal firmware.

- **Soft. Coding** is the Software Coding that determines various options for the controller. Note: Some older Control Modules are not "codeable" and you may see a Bosch part number or other information in this field.

- **Shop #** identifies the WorkShopCode (WSC) stored in the scan-tool that performed the last Coding or Adaptation procedure in this Control Module.

- The **Extra** fields can show VIN and Immobilizer information or slave controller part numbers in some vehicles.

Basic Functions
This grouping of "Safe" functions are used to read various data from the Control Module.

Advanced Functions
These functions are capable of making various "programming" changes to the Control Module. You should refer to the Factory Repair Manual for your particular car (or to other documented procedures) before "playing" with these functions. It is completely possible to render your vehicle inoperable or damage components if you make changes in this section without the correct information and training.

It is normal for some buttons to be grayed out on some control modules.   This is an indication that the control module in question doesn't support those functions. Each of the function buttons is detailed on the following pages.

Use **[Close Controller, Go Back - 06]** to properly close the communications session and return to the Select Control Module screen.

VCDS - Fault Codes - Section 5-A
(VAG 1551/1552 functions 02 and 05)
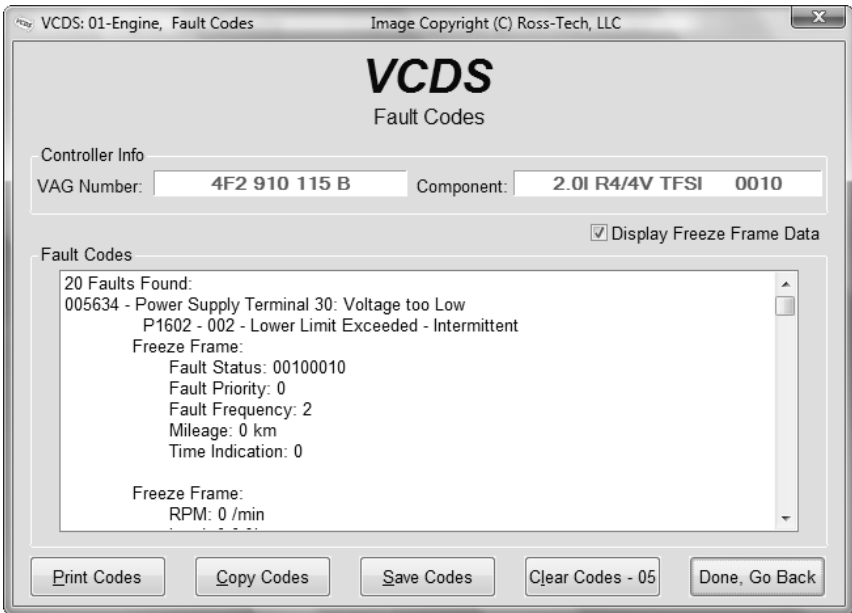
On this screen, VCDS shows you any DTCs ("Diagnostic Trouble Codes" or Fault Codes) present in the control module in which a communications session is currently active. VCDS shows the DTC numbers and also decodes each DTC into meaningful text.

At the top of the screen is shown the VAG Number and Component number as found on the Open Controller screen.

VCDS tells you how many fault codes have been found and displays each of them. The 5-digit or 7-digit number is a standardized VAG fault code, which can be searched in the Factory Repair Manuals. The text is a description of the part and failure mode. The letter and number combination in parentheses is the DIN Component Identifier. This is followed by elaborators describing the condition of the fault. The second line contains the P-code, or generic OBD-II code (if it exists, there are thousands of VAG codes without generic OBD-II equivalents).

Fault Codes cont. - Section 5-B

The **Display Freeze Frame Data** checkbox adds Freeze Frame data for Fault Codes on control modules using the KWP-2000 or CAN protocols. Note: Not all control modules fully support this. As a rule of thumb, cars which were re-designed after 2003 will likely have some control modules that support it, and older designs will not. There's no harm in leaving this enabled in any case. However, un-checking it can make the results less cluttered in a scan which contains many fault codes. In vehicles that do not support Freeze Frame, that checkbox will not be present.

One component of Freeze Frame data is the Fault Priority number as described below:

Number	Meaning
1	The fault has a strong influence on drivability, immediate stop is required.
2	The fault requires an immediate service appointment.
3	The fault doesn't require an immediate service appointment, but it should be corrected with the next service appointment.
4	The fault recommends an action to be taken, otherwise drivability might be affected.
5	The fault has no influence on drivability.
6	The fault has a long term influence on drivability.
7	The fault has an influence on the comfort functions, but doesn't influence the car's drivability.
8	General Note

Fault Frequency shows how many times the conditions that caused the fault have recurred, during all driving cycles. So, if you have a fault with a Frequency of 11, then conditions sufficient to trigger the fault have happened 11 times since the fault was stored. The counter can have values from 0 to 254. It is incremented with each occurrence of the fault (during all driving cycles).

The **Reset counter** is a number that has been pre-assigned to each fault, with the number of problem-free driving cycles before the fault presumably clears itself. Each time a driving cycle occurs, and the conditions sufficient to trigger the fault do NOT occur, then the reset counter should go down by one. So if you have a fault with a Reset Counter of 40, if the controller goes through a problem-free driving cycle then that number should go down to 39.

Fault Codes cont. - Section 5-C

[Print Codes] will print a Fault Code Report. If your PC is not connected to a printer when this button is pressed, be sure to use Windows to set the printer to "Work Off-Line" first! Later, when you connect the PC to a printer, un-check "Work Off-Line" to print the report.

[Copy Codes] will copy your fault codes to Windows Clipboard. Once you have pressed the Copy Codes button, you may paste the results into the application of your choice, such as MS Word or Notepad.

[Save Codes] will save a plain-text Fault Code Report to the Logs directory of your PC, typically: C:\ross-tech\vcds\Logs\

[Clear Codes - 05] will erase the DTCs from the Control Module's memory. Be aware, this does not fix the problem that caused the fault! DTCs should only be erased after correcting the condition(s) that caused them in the first place. Note: There is no way to erase individual DTCs while leaving others alone. This is not a limitation in VCDS. It's just the way the VAG protocols work.

[Done, Go Back] takes you back to the Controller Information Screen where you can select other functions.

VCDS - Measuring Blocks - Section 6-A
(VAG 1551/1552 function 08)

```
VCDS: 01-Engine, Measuring Blocks / Basic Settings        Image Copyright (C) Ross-Tech, LLC  ...  [X]

Sample Rate: 6.5  \              VCDS               [ Turbo! ]

Label File: 06F-907-115-AXX.LBL    Measuring Blocks

Group                   Basic Functions
[002]  [Up]  [Go!]   [ 6400 /min ]  [ 100.0 % ]    [ 16.4 ms ]    [ 166.53 g/s ]
       [Dn]
                      Engine Speed   Engine Load    Injection      Intake Air Mass
                                                    Timing

Group
[106]  [Up]  [Go!]   [ 106.4 bar ]  [ 11.0 % ]     [          ]    [ 655.35 s ]
       [Dn]
                      Fuel Rail      Electrical     Electrical     Time
                      Pressure       Fuel Pump 1    Fuel Pump 2

Group                   Charge Pressure Control
[115]  [Up]  [Go!]   [ 6400 /min ]  [ 100.0 % ]    [ 1950.0 mbar ] [ 2050.0 mbar ]
       [Dn]
                      Engine Speed   Engine Load    Boost Pressure  Boost Pressure
                                                    (specified)     (actual)

Refer to Service Manual!        [ Save ]            [ Acceleration ]

[ Switch To Basic Settings ]    [ Done, Go Back ]   [ VC-Scope ]   [ Log ]
```

On this screen, you can read all sorts of data from the Control Module in real-time.

Use **[Up]** and **[Dn]** to scroll through the available groups (000 - 255 on most Control Modules) and you can view up to three groups at the same time. Don't become discouraged when you find some that say "ERROR: Group xxx Not Available" or if you find some groups where the fields are all blank. Most 1996 and newer ECU's have Groups in the 200 range, but there are often "gaps" in the numbers.

You can also type a Group number into the Group box and click **[Go!]**

You can **[Log]** the data from the measuring blocks. For more information see the Data Logging section.

Measuring Blocks cont. - Section 6-B

 [Switch to Basic Settings] can be used to go to Basic Settings for the Group that is currently being displayed.   This should be done only under guidance from the Service Manual or when following some other documented procedure. For more information, see the Basic Settings function (Section 16 of this manual).

Note: Multiple Groups are not permitted in Basic Settings.   The **[Switch To Basic Settings]** button is intentionally disabled if you have groups "running" in the second and third rows. To stop a running group, click on the box that displays the group number (as though you wanted to enter a new number). The button is also disabled on controllers using KWP-2000. On those, you need to go directly to the Basic Settings screen.

The data presented in each **Measuring Block** Group varies greatly from Control Module to Control Module and between different models and years.   Some groups are documented in the Factory Repair Manuals, but many are not. Feel free to explore the Control Modules in your car by scrolling through all the Groups. You can't hurt anything with the Measuring Blocks function!

VCDS will attempt to "scale" the raw data coming from the Control Module into real-world units like degrees C, km/h, etc. At the present time, all scaling conversions are to metric units.

> **Note: Group 000** and any other group that displays 10 fields instead of 4 is an exception. No scaling is possible because the Control Module provides no "Data Type" information with the data for these. Groups of this type can only be displayed in the top row of the screen.

VCDS also tries to elaborate as much as possible what the data means. Unfortunately, the "Data Type" information coming from the Control Module is not that precise.   For example: VCDS can tell that a particular field contains a Temperature, but the data from the Controller doesn't tell us whether this is the Coolant Temperature or the Intake Air Temperature.

To reduce the confusion, VCDS supports Label Files and will display the name of the Label File on the top left corner of the screen. If you click on the name of the Label File, the file will open in Notepad or whatever program you have set to handle *LBL files. When a Label file for the Control Module you are looking at does not exist, VCDS will come up with an "educated guess" for what a particular Data Type means. The dealers' VAG-1551 and 1552 scan-tools do not provide any elaboration; they only show what's in the display fields!

Group 000 supports special Labels. Due to space constraints on the screen, these labels are displayed in a "balloon" when the user clicks on a field:
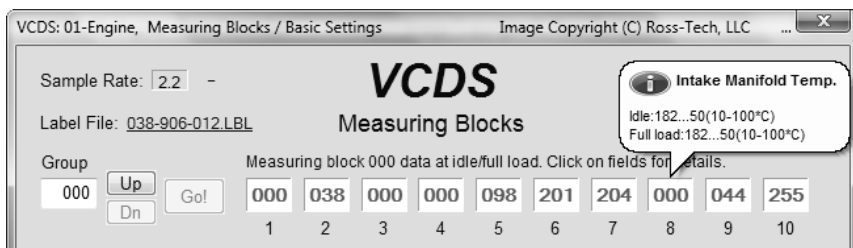
Measuring Blocks cont. - Section 6-C

Label Files also allow a third label field to be defined for each of the normal measuring block fields.   This label is displayed in a balloon when the user clicks on the field. The idea is to put "specified values" in this field:
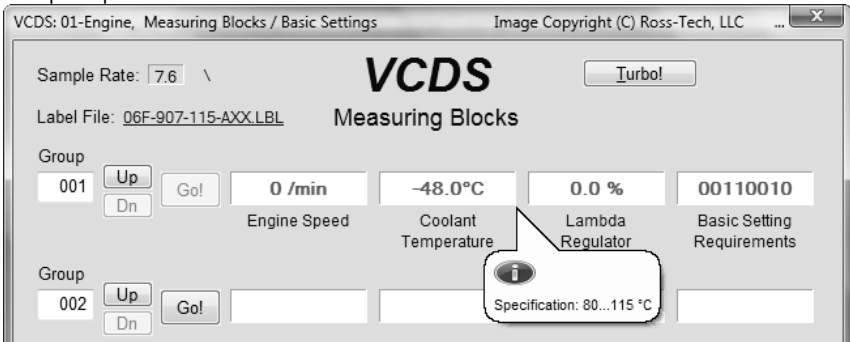
Sample Rate: We can get just over 4.0 samples per second from our '97 VR6 ECU (single group) with the most aggressive protocol-timing settings. This ECU runs at 9600 baud. Most newer ECU's run at 10400 and should give proportionately more. Naturally, if two groups are being displayed simultaneously, the sample rate drops to around 2.0, and 3 groups simultaneously runs at around 1.3. Sample Rate will vary from controller to controller and the PC used will also have some effect. Some controllers (particularly AG4 transmissions and Digifant-III ECU's) use a "hybrid" data-type that requires reading a long header when changing group numbers. Viewing multiple groups still works with these data types, but the sample rate becomes extremely slow. If you see "Reading Header" all the time under the Sample Rate display, you'll know you've got one of these.

In Engine controllers using KWP-2000, there is a **[Turbo]** button in the top right of the Measuring Blocks screen. Pressing this button can significantly speed up sampling, for example over 30 samples per second when logging a single group in our Touareg. Once you have pressed **[Turbo]** you will remain in this High-Speed mode until you exit the Measuring Blocks screen:
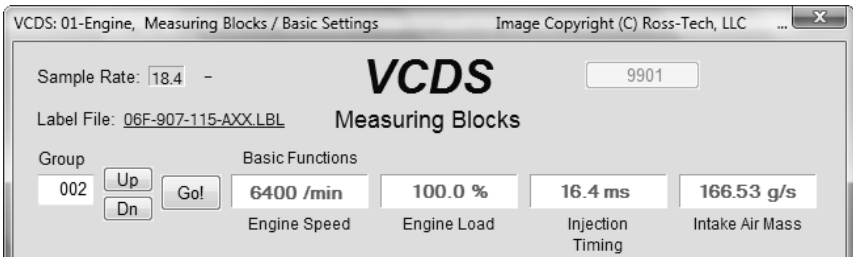
[VC-Scope] is a plug-in for VCDS that allows you to graph Measuring Group Information. See Section 34 for information on VC-Scope.
Use **[Done, Go Back]** to return to the Open Controller screen.

Measuring Blocks cont. - Section 6-D

When you have one or more measuring group with speed (km/h) in it, clicking on **[Acceleration]** will bring up the Acceleration Measurement window, which allows you to enter start and stop speeds and distances. This is described in the Acceleration Measurement section of this manual.

After entering the values you want to measure, click **[Start]** and do your testing.

When complete, click on **[Save]** to save a copy of your results to your C:\Ross-Tech\VCDS\Logs directory

Advanced Measuring Blocks

You may also want to try the Advanced Measuring Blocks function (see the table of contents), which frees you from the grouping format of the Measuring Blocks function.

Warning! If you wish to observe real-time data while driving the car, please use a second person!   Let one drive while the other observes the data, making sure the person holding the PC is not in front of an active airbag!

.

VCDS - Data Logging - Section 7-A

You can log the data from the Measuring Blocks screen to a .CSV file.   These files can be opened and analyzed with Excel or other spreadsheet applications.
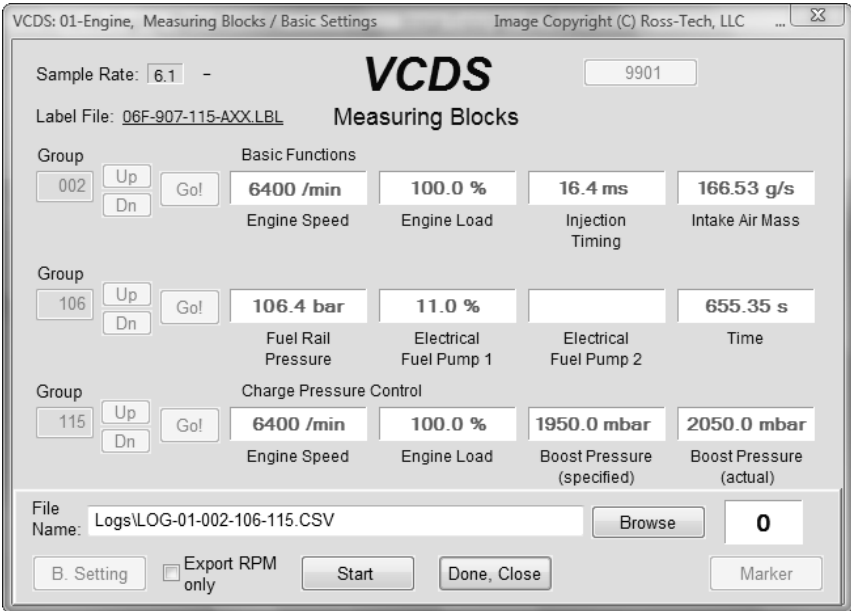
Export RPM Only when checked will record only RPM from the first field and will not record other fields. Also, this will only record RPM values that are non-zero. This feature can be useful if you are logging to output the file to a spreadsheet or other third party software

While the Log Dialog is open, **[Start]**, **[Stop]**, and **[Resume]** can all be done with the same button. **[Start]** begins saving the data to a log file.
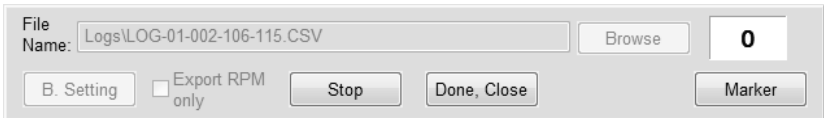
[Stop] discontinues the saving of data to a log file
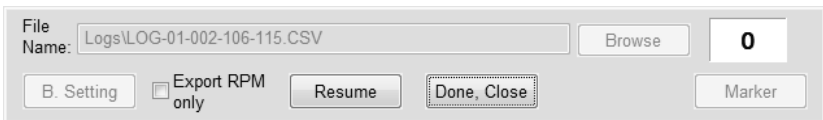
[Resume] continues the saving of data to a log file.

Data Logging cont. - Section 7-B

The **[Marker]** function places a sequential number in the file when you click the Marker button. This can be helpful for data analysis.

The **[Browse]** button allows you to specify the location for your logs. By default, Log Files will be placed in the Logs sub-folder in your PC, typically: C:\ross-tech\vcds\Logs\

By default, the name of the log file will be the controller number followed by the number for each group number that you are logging. The name can be changed to anything you'd like. If you re-use an existing filename, your new data will be appended to that file.

Switch to Basic Settings is not currently available while logging (but may be added later). However, you can start a log while you're in Basic Settings.   If VCDS keeps insisting that it can't open a Log file, you're probably missing the LOGS folder and should re-install VCDS.

Example using Microsoft Excel:

1. Choose the group or groups that you want to view.
2. Click the **[Log]** button
3. Use default file name if desired. It will append the old file if you use a particular name more than once.
4. Click **[Start]**
5. Drive the car through the tests that you want to perform
6. Click **[Stop]**
7. Click **[Done]** when you're finished logging data.
8. Open Microsoft Excel
9. Click File->Open (change filetype to all *.*)
10. Locate the *.csv file that you created, typically in C:\ross-tech\vcds\Logs\
11. With mouse select the columns you want to graph.
12. Click the Chart Wizard button.
13. Select XY (Scatter) and click one of the formats that has lines.
14. The chart wizard will prompt you to name axes if you want.
15. Pick, for example, RPM values for the x-axis and IAT for the y-axis

You can also use the **[VC-Scope]** plug-in for VCDS that allows you to replay LOG files. See Section 34 for information on VC-Scope.

Warning!
If you're going to use VCDS while you're driving, please use a second person!   Let one drive while the other observes the data, making sure the person holding the PC is not in front of an active airbag! Obviously, do not break any laws, speeding or otherwise while using VCDS!

VCDS - Single Reading- Section 8-A
(VAG 1551/1552 function 09)

```
VCDS: 01-Engine, Open Controller        Image Copyright (C) Ross-Tech, LLC          ⌧

  Comm Status                        VCDS
  IC=1  TE=0  RE=0
  Protocol: KW1281      /          Open Controller

  Controller Info
  VAG Number:      038 906 012 FD        Component:   1,9I R4 EDC 0700SG  4102

  Soft. Coding:       00002             Shop #:        WSC 03763

     Extra:              WVWSP61JX2W606923    VWZ7Z0A4746309

     Extra:
```

```
VCDS: 01-Engine, Single Reading         Image Copyright (C) Ross-Tech, LLC          X


  Chan.                              Chan.
  003   [Up]  [Go!]    809          005   [Up]  [Go!]    684
        [Dn]                              [Dn]



                    [ Done, Go Back ]
```

This function allows you to look at real-time data from control modules that support it.
However, the data stream coming from the control module gives NO CLUE what the data
means or how to scale it into real-world values.

The only way to know what the values mean is to find a reference to this function in
the Factory Repair Manual for your car.

This function is rare, but it is used, for example, with some OBD-I 2.8L 12V V6 engines.

The very name of this function annoyed us, so we added a twist. You can look at two
channels of "Single Readings" at once!

Use **[Up]** and **[Dn]** to scroll through the available groups (000 - 255 on some Control
Modules). Don't become discouraged when you find some where the fields are all blank.
You can also type a Channel number into the Channel box and click **[Go!]**

Use **[Done, Go Back]** to return to the Open Controller screen.

Note: On the Open Controller screen, the Supported Codes button will appear in place of
the Single Reading function in modules that support it, since the two functions are mutually
exclusive.

VCDS – Supported Codes- Section 9-A

VCDS: 09-Cent. Elect., Supported Codes   Image Copyright (C) Ross-Tech, LLC

VCDS
Supported Codes

45 DTCs supported, 2 stored, 0 active:

DTC 00532 - Failure mode 002
MIL triggered:no, Active:no, Stored:yes, Test finished:yes

DTC 00446 - Failure mode 002
MIL triggered:no, Active:no, Stored:yes, Test finished:yes

DTC 00003 - Failure mode 014
MIL triggered:no, Active:no, Stored:no, Test finished:yes

DTC 00532 - Failure mode 001
MIL triggered:no, Active:no, Stored:no, Test finished:yes

DTC 00447 - Failure mode 001
MIL triggered:no, Active:no, Stored:no, Test finished:yes

DTC 00862 - Failure mode 007
MIL triggered:no, Active:no, Stored:no, Test finished:yes

Sort
- ○ Default
- ○ Code number
- ⦿ Stored
- ○ Active

OK

Supported Codes function: On the latest control modules which have this capability, VCDS can show all DTC and Failure Mode combinations which a control module is capable of detecting, including the current status of each.

You can sort the results by selecting the radio buttons on the right side of the screen.

Use **[OK]** to return to the Controller Info / Select Function screen.

Note: On the Open Controller screen, the Supported Codes button will appear in place of the Single Reading function in modules that support it, since the two functions are mutually exclusive.

VCDS - View Readiness - Section 10-A
(VAG 1551/1552 function 15)

```
VCDS: 01-Engine, Open Controller          Image Copyright (C) Ross-Tech, LLC          [X]

 Comm Status                    VCDS
 IC=1  TE=0  RE=0
 Protocol: CAN        I         Open Controller

 Controller Info
 VAG Number:    4F2 910 115 B      Component:    2.0l R4/4V TFSI    0010
```
```
VCDS: 01-Engine, View Readiness          Image Copyright (C) Ross-Tech, LLC          [X]

                        Readiness Status:
                           0110 0101

 Exhaust Gas Recirculation              Secondary Air Injection
    Passed                                 Passed
 Oxygen Sensor Heating                  Evaporative Emissions
    Failed or Incomplete                   Failed or Incomplete
 Oxygen Sensor(s)                       Catalyst Heating
    Failed or Incomplete                   Passed
 Air Conditioning                       Catalytic Converter(s)
    Passed                                 Failed or Incomplete

              Go Back              Set Readiness
```

The Readiness Code is a set of 8 bits, each of which corresponds to one monitored emissions "system" in an OBD-II car. When all readiness bits show "Passed", it means that all systems have been checked and have passed the on-board tests.

Whenever you clear DTCs, all readiness bits that are testable will be set to "Fail". Most cars do not have all 8 systems, so the ECU should recognize the bits corresponding to systems that are not actually in the car. These will come up "Passed" automatically without going through any tests.

It takes a variety of specific driving conditions to "test" all the systems. In practice, driving a properly-functioning car for 2-3 days including at least one short highway trip, should be sufficient to test each of the Readiness Bits to set all of the testable ones to "Pass". It can be done in a short time using a very specific and complicated procedure found in the On Board Diagnostic section of the Factory Repair Manual for your engine or you can use the Guided Readiness Script function in VCDS as described later in this section.

VCDS also Decodes Readiness bits into meaningful data on modern TDI engines
(a VCDS exclusive, not even the VAS-5051/5052 do this!) shown here:
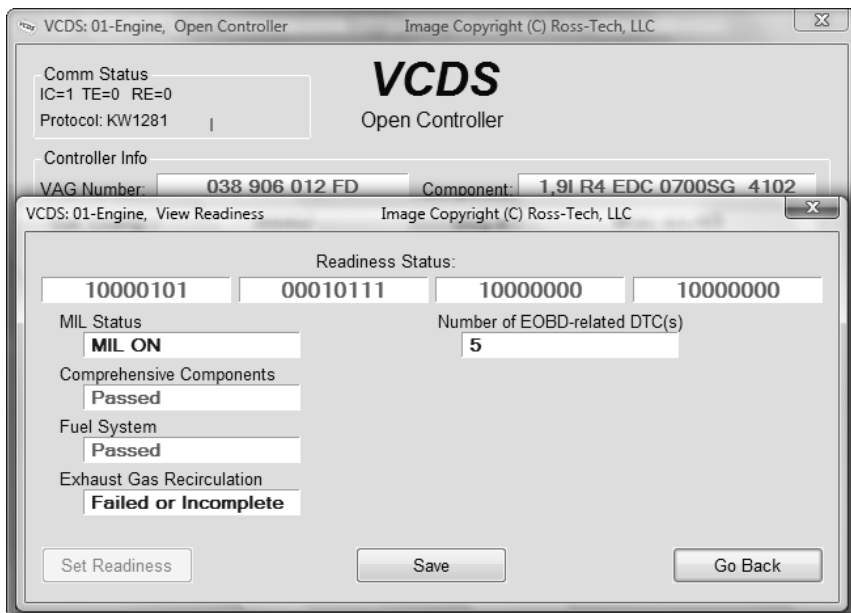
Click on **[Save]** to store the results to your PC, typically in this directory on your PC:

 C:\Ross-Tech\VCDS\Logs

Use **[Go Back]** to return to the Open Controller screen.

Notes:

The Readiness function is only available on Engine Controllers that are OBD-II compliant
(all 1996 and newer US-Model) or EOBD compliant (all 2001 and newer European-market
models).

Non-US models and older TDIs may not support the Readiness function even though they
are otherwise OBD-II compliant. OBD-I did not require any "monitors".

12V 2.8L V6 engines may have readiness bits stored in or near Measuring Block
Group 029.

The **Guided Readiness Scripts** function will guide the user through the process of setting Readiness on those engines which support it by clicking on the **[Set Readiness]** button:

VCDS: 01-Engine, Open Controller   Image Copyright (C) Ross-Tech, LLC

Comm Status
IC=1 TF=0 RF=0

VCDS

VCDS: 01-Engine, Measuring Blocks / Basic Settings   Image Copyright (C) Ross-Tech, LLC

Sample Rate: 3.4 \

VCDS

Label File: 022-906-032-AXK.LBL   Basic Settings

Group

205	Up	Go!	5.42 g/s	155.0°C	1.480 V	00000000
	Dn					

VCDS: 022-906-032-AXK.crd

Diagnostic of pre-CAT Oxygen Sensor Heater.

- Press and Hold Brake Pedal.
- Press Accelerator Pedal to the floor. The ECU will maintain engine speed of approximately 2300 RPM.
- Maintain this state **until Field number 4 shows xxxxx100,**
- then release accelerator and brake and click [Next].

If the specified value cannot be obtained, check DTC memory.

Step 10 of 25	Next	Cancel	Elapsed time: 3s

The Guided Readiness Scripts require supporting data in Label files. Not every possible engine is currently documented but we hope to have most US-model engines covered in the near future. If you have a specific engine you would like to see covered and have a written procedure for it, please contact us at support@Ross-Tech.com

Use **[Next]** to advance through the on-screen prompts or **[Cancel]** to exit out of Guided Readiness.

VCDS - Advanced Identification - Section 11-A
(VAS 5051/5052 "Identification Services")

```
VCDS: 01-Engine,  Advanced Identification          Image Copyright (C) Ross-Tech, LLC          [ X ]

  Advanced Identification
     Serial number:
     Identification: BPG-810
     Revision: --H11---
     Date: 02.11.05
     Manufacturer number: 0967
     Test stand number: 1480
  Flash Status
     Programming Attempts: 0
     Successful Attempts: 0
     Programming Status: 00000000
     Required Conditions: 00000010
  Software
     P000
     A4.8.7
  Misc.                                                                   [   Copy    ]
     Hardware number: 4F2 907 115
     Immo IV Challenge: 62 BE 39 0A
  Car Info
     Chassis Number: WAUZZZ4F36N111022                                    [   Save    ]


                                                                          [  Go Back  ]
```

Corresponds to VAS-5051/5051 "Identification Services"

This function displays additional (and sometimes quite arcane) identifying data from the control module which does not fit on the Open Controller screen.

Notes:

- The Advanced ID function is not available on control modules using the old KW-1281 protocol.

- The amount of data appearing on this screen will vary based on what the control module supports.

[Copy] will copy the information shown on this screen to the Windows Clipboard. Once you have pressed the Copy Codes button, you may paste the results into the application of your choice, such as MS Word or Notepad.

[Save] will save a plain-text report to your PC, typically in this directory: C:\Ross-Tech\VCDS\Logs

Use **[Go Back]** to return to the Open Controller screen.

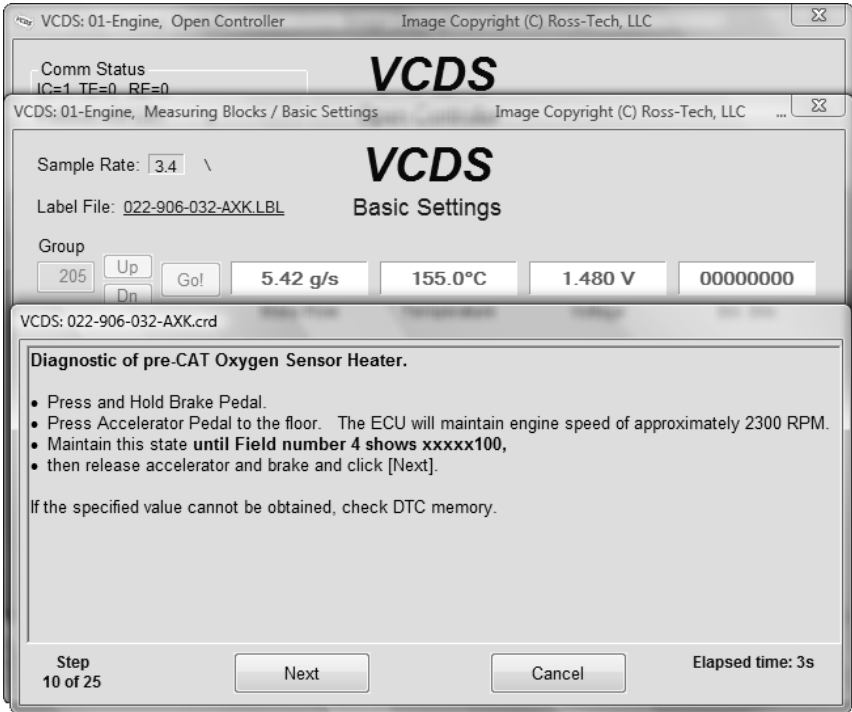| VCDS: 01-Engine, Advanced Measuring Blocks	Image Copyright (C) Ross-Tech, LLC	X

Sample Rate: 2.4

VCDS
Advanced Measuring Blocks

[Turbo!]

Info1	Info2	Actual	Specified
Engine Speed		0 /min	
Intake Air Mass		0.00 g/s	
Coolant	Temperature	-48.0°C	Specification: 80...

Graph	Log	Save	Done, Go Back
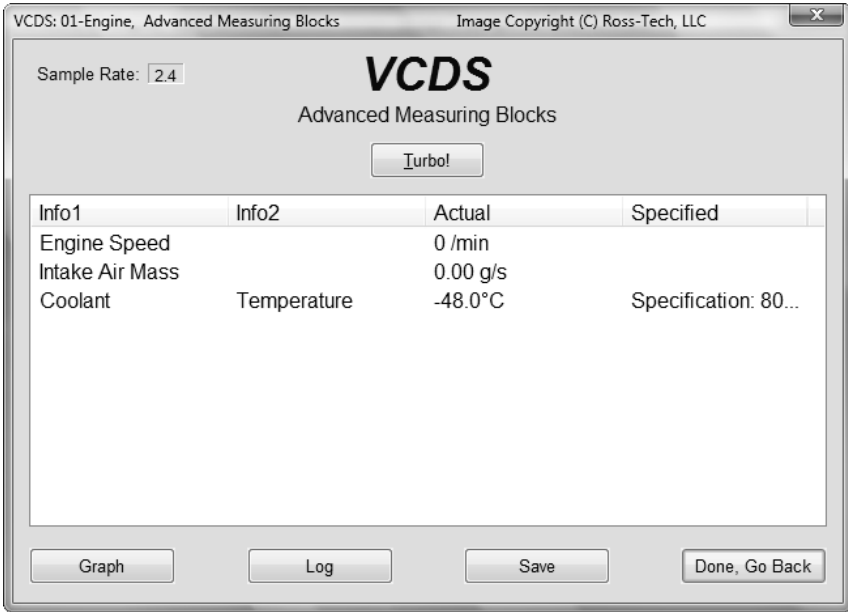
This function expands on the Measuring Blocks function and lets you select up to 12 measuring values from as many as 12 different groups from a selection dialog that shows the contents of the measuring values.   This function is available only when a label file exists for the control module being accessed.

Warning!
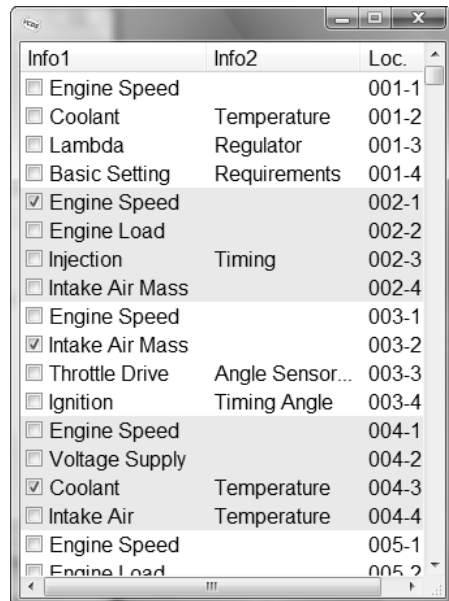If you wish to observe real-time data while driving the car, please use a second person!   Let one drive while the other observes the data, making sure the person holding the PC is not in front of an active airbag!

Note: You may also want to try the Measuring Blocks function, which accesses the same data but in a different format. (see Section 6 of this manual).

The Advanced Measuring Blocks function has two screens, the main one shown above and the Item Selection Window shown to the right. Check each value you would like to show and uncheck each that you would like to remove. ►

Info1	Info2	Loc.
☐ Engine Speed		001-1
☐ Coolant	Temperature	001-2
☐ Lambda	Regulator	001-3
☐ Basic Setting	Requirements	001-4
☑ Engine Speed		002-1
☐ Engine Load		002-2
☐ Injection	Timing	002-3
☐ Intake Air Mass		002-4
☐ Engine Speed		003-1
☑ Intake Air Mass		003-2
☐ Throttle Drive	Angle Sensor...	003-3
☐ Ignition	Timing Angle	003-4
☐ Engine Speed		004-1
☐ Voltage Supply		004-2
☑ Coolant	Temperature	004-3
☐ Intake Air	Temperature	004-4
☐ Engine Speed		005-1
☐ Engine Load		005-2

VCDS lets you save a list of Advanced Measuring Blocks, to be easily accessed later on. For instance, if you often log Vehicle Speed, Engine Speed, Intake Air Mass, and Ignition timing, then you can create a file to quickly load those selections again. To save a set of items, click on the VCDS logo found on the top left corner of the item selection window, and then select "Save selection to file":
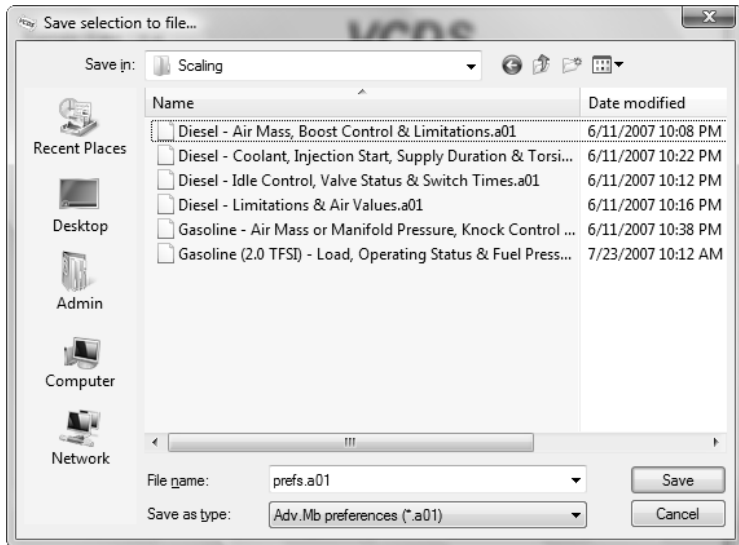
Give the file a name and specify the directory if desired. To load a set of previously saved items, click on the VCDS logo found on the top left corner of the item selection window, then select "Load selection from file". Locate the previously saved file and click [**Open**].

Sample Rate: The amount of data acquired in a given amount of time is determined by the controller in the vehicle. Selecting a greater number of different Groups will result in slower sampling so momentary "spikes" or "dips" will be harder to capture. In Engine controllers using KWP-2000 or CAN, there is a [**Turbo**] button to significantly speed up sampling, for example over 30 samples per second when logging a single group in our Touareg. Once you have pressed [**Turbo**] you will remain in this High-Speed mode until you exit the Advanced Measuring Blocks screen. This function is only available when using a HEX Interface.

[**Graph**] will open up VC-Scope, a plug-in for VCDS that allows you to graph Measuring Group Information and display customizable virtual gauges. For more information, see the VC-Scope section of this manual (section 34).

You can [**Log**] the data from the Advanced Measuring Blocks screen. For more information see the Data Logging section of this manual (section 7).

When you have one or more measuring group with speed (km/h) in it, clicking on [**Acceleration**] will bring up the Acceleration Measurement window, which allows you to enter start and stop speeds and distances. This is described in the Acceleration Measurement section of this manual (section 13).

Use [**Done, Go Back**] to return to the Controller Information screen.

VCDS – Acceleration Measurement - Section 13-A

VCDS: 01-Engine, Acceleration measurement	Image Copyright (C) Ross-Tech, LLC

VCDS
Acceleration Measurement

Metric units

52 km/h	1206 m

0 to 100 km/h:	8.9 +- 0.12s

400m:	16.4 +- 0.12s, @145 km/h

90 to 120 km/h:	3.7 +- 0.12s

200 meters:	10.9 +- 0.12s, @114 km/h

US Units

32 mph	3957 ft

0 to 60 mph:	8.5 +- 0.16s

1/4 mile:	16.4 +- 0.12s, @90 mph

60 to 90 mph:	7.5 +- 0.16s

660 feet:	10.9 +- 0.12s, @71 mph

[Start]   [Done, Go Back]   [Save]

When you have one or more Measuring Block or Advanced Measuring Block with speed (km/h) in it, clicking on **[Acceleration]** will bring up the Acceleration Measurement window, which allows you to enter start and stop speeds and distances. After entering the values you want to measure, click **[Start]** and do your testing. When complete, click on **[Save]** to save a copy of your results to your C:\Ross-Tech\VCDS\Logs directory.
Use **[Done, Go Back]** to return to the Measuring Blocks or Advanced Measuring Blocks screen.

Warning!
If you wish to observe real-time data while driving the car, please use a second person!
Let one drive while the other observes the data, making sure the person holding the PC is not in front of an active airbag!

VCDS - Login - Section 14-A
(VAG 1551/1552 function 11)

VCDS: 01-Engine, Open Controller   Image Copyright (C) Ross-Tech, LLC

VCDS

Open Controller

Comm Status
IC=1 TE=0 RE=0
Protocol: KW1281   /

Controller Info

VAG Number:	06A 906 019	Component:	1.6l R4/2V SIMOS HS2272
Soft. Coding:	04000	Shop #:	WSC 00000
Extra:			
Extra:			

VCDS: 01-Engine, Login   Image Copyright (C) Ross-Tech, LLC

Many Controllers only allow one attempt. If an incorrect Code is entered,
you will have to turn the ignition OFF for a minute or two before trying again.
Refer to Service Manual for a valid Code!

Enter Code (0 - 65535):   01283   or   Use 7-digit PIN/SKC

Do It!   Cancel

The Login Function must be used on some (but not all) Control Modules before you can
Recode or change Adaptation values. On others, it "enables" certain features like cruise
control. Valid Login codes can be found in the Factory Repair Manual for your car.

If you are working on an Immobilizer, select **[Use 7-digit PIN/SKC]** to enter a 7-digit Secret
Key Code. This function is described in Section 15.

Balloons: VCDS can show Login "charts" when appropriate information is available in a
Label File for the control module in question. The balloon will appear after a few seconds if
the Label File contains the appropriate information.

This warning appears in the upper
right corner of the screen if a
session is disconnected after you
have done a Login. ►

Image Copyright (C) Ross-Tech, LLC

VCDS

Open Controller

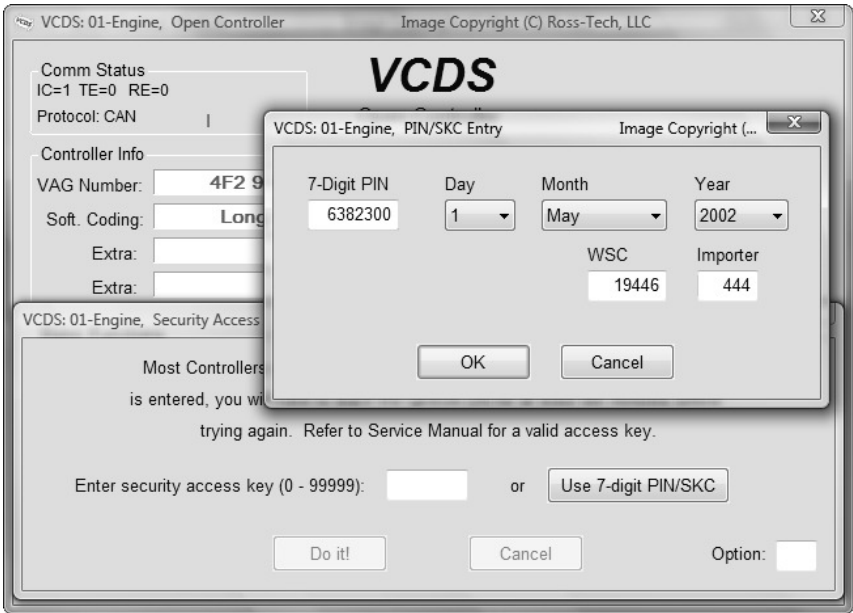Warning:
Login Lost due to
dropped session..

The most common cause of this is the use of an incorrect login code or a 7-digit PIN/SKC
based on an incorrect Immobilizer ID or incorrect data entered in the 7-digit dialog. You will
need to exit the Controller and do another Login.

Use the **[Do It!]** button to save the Login and return to the Select Function Screen.

Use the **[Cancel]** button to cancel the Login and return to the Select Function Screen.

VCDS - 7-digit PIN/SKC - Section 15-A

| VCDS: 01-Engine, Open Controller | Image Copyright (C) Ross-Tech, LLC |

VCDS

Comm Status
IC=1 TE=0 RE=0
Protocol: CAN

Controller Info
VAG Number: 4F2 9
Soft. Coding: Long
Extra:
Extra:

| VCDS: 01-Engine, PIN/SKC Entry | Image Copyright (... |

| 7-Digit PIN | Day | Month | Year |
| 6382300 | 1 ▼ | May ▼ | 2002 ▼ |

WSC: 19446   Importer: 444

OK   Cancel

VCDS: 01-Engine, Security Access

Most Controllers
is entered, you wi
trying again. Refer to Service Manual for a valid access key.

Enter security access key (0 - 99999): _____ or [Use 7-digit PIN/SKC]

Do it!   Cancel   Option:

The 7-digit PIN/SKC (Secret Key Code) dialog is used for Key Matching and Immobilizer Adaptation.

Important: Unless you ALREADY have the SKC information for your vehicle and components then you will NOT be able to do any of the Immobilizer functions. Please see the FAQ number 4.15 for information on SKC availability.

You must enter the following information:

- **7-digit SKC that the dealer generated for your exact Immobilizer ID Number.**
- **Date on which the SKC was *GENERATED BY THE DEALER*.**
- **Workshop Code (WSC) for the dealer that generated the SKC.**
- **Importer Number for the dealer that generated the SKC.**

The 7-digit SKC is useless without **ALL** of these items.

7-digit PIN/SKC cont. - Section 15-B

When you have filled in all of the data click **[OK]**. If any of the entered data does not make sense, this message may appear: ►
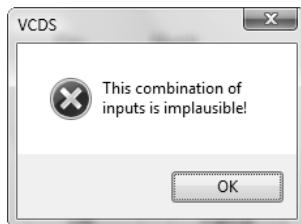
When you have successfully submitted the 7-digit PIN/SKC, you are taken back to either the Login or Adaptation screen (wherever you were when you clicked on **[Use 7-digit PIN/SKC]**). Now, you should have "XXXXX" in Login or Adaptation value.

Notes:

Unlike the factory diagnostic tools, with VCDS, the same PIN can be used for a particular car at any time in the future, as long as you keep track of the PIN, along with the Date on which the PIN was *GENERATED BY THE DEALER*, the dealer's Workshop Code (WSC) and the Importer number.

If you obtain a 7-digit SKC, but the dealer has not provided the WSC, look at the window stickers of vehicles on the dealer's lot. The dealer number will be listed next to the name and address of the dealer. In the US, the dealer number will be a 4 followed by five more digits, for example 401742. To obtain the WSC, delete the 4 and simply use the remaining five digits, 01742 in the above example.

The Importer number should be:
444 for all dealerships in the US
999 for all dealerships in Canada
995 for all dealerships in France

Use the **[OK]** button to save the 7-digit information and return to the Login or Adaptation screen

Use the **[Cancel]** button to return to the Login or Adaptation screen without saving.

VCDS - Basic Settings - Section 16-A
(VAG 1551/1552 function 04)
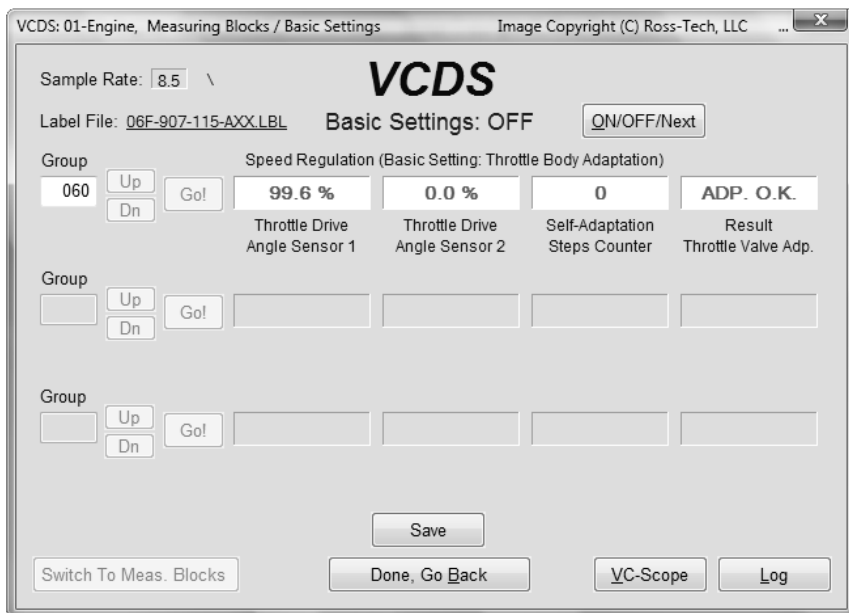
Basic Settings mode is very similar to Measuring Blocks and the contents of each display group is the same. The difference between the functions is that the Control Module may try to perform various calibrations while in Basic Settings mode.

The most common use for the Basic Settings function is to recalibrate the Throttle Body. Another common use for Basic Settings is to bleed the ABS Hydraulic Unit on newer cars. Please refer to a Factory Repair Manual for your car before attempting to do these procedures!

In controllers using KW-1281, the Basic Settings function "does its thing" as soon as you have entered a group number and clicked **[Go!]** or as soon as you have entered Basic Settings through the Measuring Blocks function. In Controllers using KWP-2000, there is an **[ON/OFF/Next]** button that allows you to initiate and exit Basic Settings while still being able to see the values in the measuring groups.

If you'd like to record just a snapshot in time of the current readings in each group, click on **[Save]**. This will save the results to your PC, typically in your VCDS\Logs directory.

[Switch to Meas. Blocks] will switch back to the passive (and "safe") Measuring Blocks mode (only in controllers using KW-1281).

[VC-Scope] is a plug-in for VCDS that allows you to graph Basic Settings information and display customizable virtual gauges. For more information, see section 34.

You can begin and end a Data **[Log]** while in Basic Settings. See section 7 of this manual for information on Data Logging.

Basic Settings cont. - Section 16-B
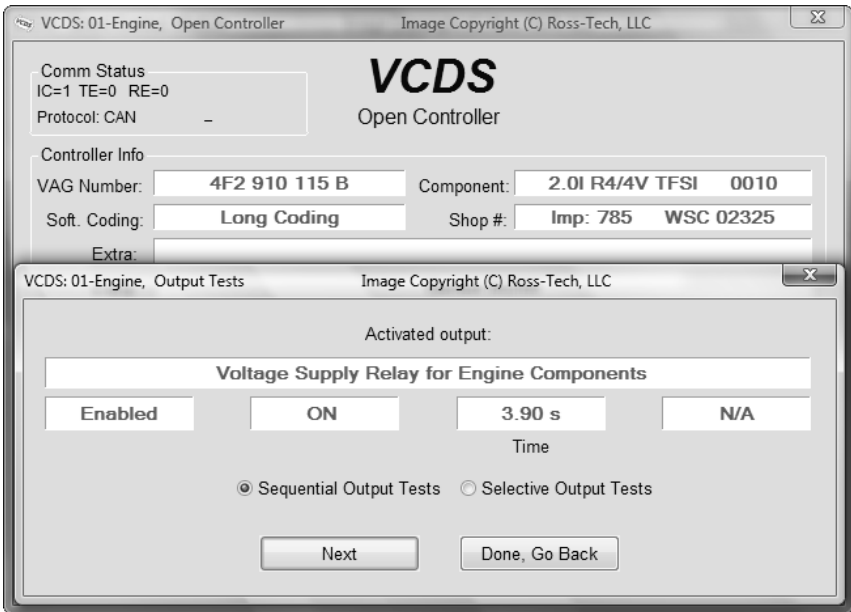
Warnings:

- You should refer to the Factory Repair Manual for your particular car (or some other documented procedure) before "playing" with the Basic Settings function. Failure to follow the proper procedures can result in serious damage to the vehicle.

- Although you can use the **[Up]** and **[Dn]** buttons to scroll through the available groups just like on the Measuring Blocks screen, this is NOT a good idea since you may put the Controller into Basic Settings for a Group that you did not intend.

Notes:

- Multiple Groups are not permitted in Basic Settings. The data presented in each **Basic Settings** Group varies greatly from Control Module to Control Module and between different models and years. Some groups are documented in the Factory Repair Manuals, but many are not.

- VCDS tries to elaborate on the meaning of the data as much as possible but the "Data Type" information coming from the Control Module is not very precise. For example: VCDS can tell that a particular field contains a Temperature, but the data from the Controller doesn't tell us whether this is the Coolant Temperature or the Intake Air Temperature.

- To reduce the confusion, VCDS supports Label Files and will display the name of the Label File. The Label File name is displayed on the top left when you are in Measuring Blocks or Basic Settings. If you click on the name of the Label File, the file will open in Notepad or whatever program you have set to handle *LBL files. When a Label file for the Control Module you are looking at does not exist, VCDS will come up with an "educated guess" for what a particular Data Type means. The dealers' VAG-1551 and 1552 scan-tools do not provide any elaboration; they only show what's in the display fields! Basic Setting will display a popup balloon when the mouse if hovered over each value, if the Label File contains information for that field in that controller. See section 6 for more information on the Measuring Blocks function.

Use **[Done, Go Back]** to return to the Open Controller screen.

VCDS - Output Tests - Section 17-A
(VAG 1551/1552 function 03)

```
VCDS: 01-Engine,  Open Controller        Image Copyright (C) Ross-Tech, LLC        [X]

Comm Status                  VCDS
IC=1 TE=0 RE=0
Protocol: CAN      _         Open Controller

Controller Info
VAG Number:    4F2 910 115 B    Component:   2.0l R4/4V TFSI    0010
Soft. Coding:    Long Coding     Shop #:    Imp: 785   WSC 02325
Extra:
```

```
VCDS: 01-Engine,  Output Tests        Image Copyright (C) Ross-Tech, LLC        [X]

                     Activated output:

          Voltage Supply Relay for Engine Components

   Enabled          ON            3.90 s          N/A
                                    Time

          ○ Sequential Output Tests   ○ Selective Output Tests

             [ Next ]        [ Done, Go Back ]
```

The Output Tests function is used to test a Control Module's Electrical Outputs (and the wiring that connects it to the various devices). Output Tests under KWP-2000 includes simultaneous measuring data when available from the control module in question.

To begin Output Tests, and to progress through each step, click **[Start/Next]**.

Notes:
The Outputs that can be tested and the sequence in which they become active is controlled strictly by the Control Module; this is not a function of the Diagnostic Tester. To find out which Outputs can be tested and the sequence in which they will become active, please refer to the Factory Repair Manual for your car.

Once the Test Sequence has been started, clicking **[Done, Go Back]** will take you back to the Open Controller Function Screen. **THE TEST SEQUENCE WILL STILL BE ACTIVE!**

Most Control Modules will permit the Output Test Sequence to be run only one time per session. If you run the Test Sequence to completion, VCDS will allow you to return to the previous screen without closing the session, but you may not be able to run the Output Test Sequence again. If you need to run the Sequence again, manually Close the Controller and re-start the session. On some cars, you must cycle the key OFF and ON or even start the engine (to clear the cylinders of fuel).
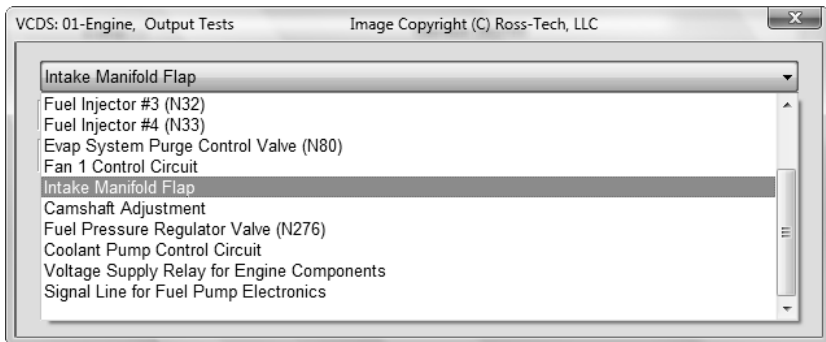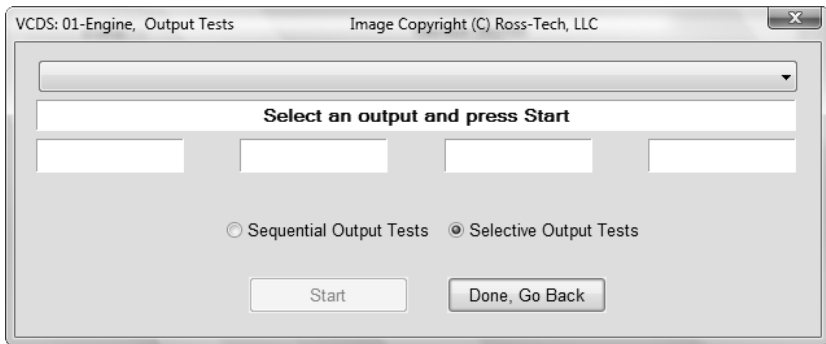
Some Outputs require additional action before they become active. Fuel Injectors are a common example. To activate a Fuel Injector, you must press (and in some cases release) the gas pedal. Exact details can be found in your Factory Repair Manual.

Output Tests cont. - Section 17-B

On most systems, the Output Tests function is only available when the Engine is not running.

It is perfectly normal to see a "short to ground" message in the process of running Output Tests. The ECU identifies which output it is currently testing by sending a fault-code number. On many ECUs the full text for this fault code includes "short to ground". Why? Because one side of the actuator in question has 12V on it all the time and the ECU completes the circuit (and turns the actuator on) by pulling the other side to ground.

Selective Output Tests. On those modules which support it, this is a more sophisticated version of the traditional (sequential) Output Test function. It allows the user to select a particular output and activate it directly without going through a pre-defined sequence to get there. Some modules have outputs which can only be tested this way. Selective Output Tests *requires* supporting data in a label file. There is no way to efficiently query a control module to find out which outputs are supported.

VCDS: 01-Engine, Output Tests	Image Copyright (C) Ross-Tech, LLC	✕

Select an output and press Start

○ Sequential Output Tests   ● Selective Output Tests

Start	Done, Go Back

VCDS: 01-Engine, Output Tests	Image Copyright (C) Ross-Tech, LLC	✕

Intake Manifold Flap ▼

Fuel Injector #3 (N32)
Fuel Injector #4 (N33)
Evap System Purge Control Valve (N80)
Fan 1 Control Circuit
Intake Manifold Flap
Camshaft Adjustment
Fuel Pressure Regulator Valve (N276)
Coolant Pump Control Circuit
Voltage Supply Relay for Engine Components
Signal Line for Fuel Pump Electronics

Output Tests cont. - Section 17-C

VCDS: 01-Engine, Output Tests		Image Copyright (C) Ross-Tech, LLC	
Intake Manifold Flap			
Running…			
Enabled	99.6 %	3.96 s	N/A
	Duty Cycle	Time	

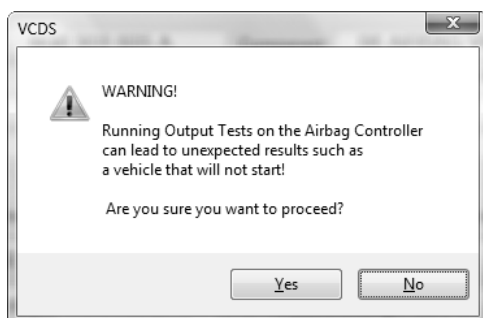○ Sequential Output Tests ◉ Selective Output Tests

Stop	Done, Go **B**ack

Warning:

Do not use the Output Tests function on any system while the car is in motion!   Running Output Tests on the ABS brake system can temporarily disable the brakes entirely and cause individual wheels to lock and unlock.

We strongly suggest you refer to the Factory Repair Manual for your specific car before running Output Tests on any Control Module so you will know what to expect!

If you try to perform Output Tests on an Airbag controller, the following warning will pop up:

> VCDS
>
> ⚠ WARNING!
>
> Running Output Tests on the Airbag Controller
> can lead to unexpected results such as
> a vehicle that will not start!
>
> Are you sure you want to proceed?
>
> [<u>Y</u>es]   [<u>N</u>o]

For example, in the VW Touareg, a specific procedure must be performed to be able to start the vehicle if Output Tests on the Airbag Controller have been performed.

Use **[Done, Go Back]** to return to the Open Controller screen.
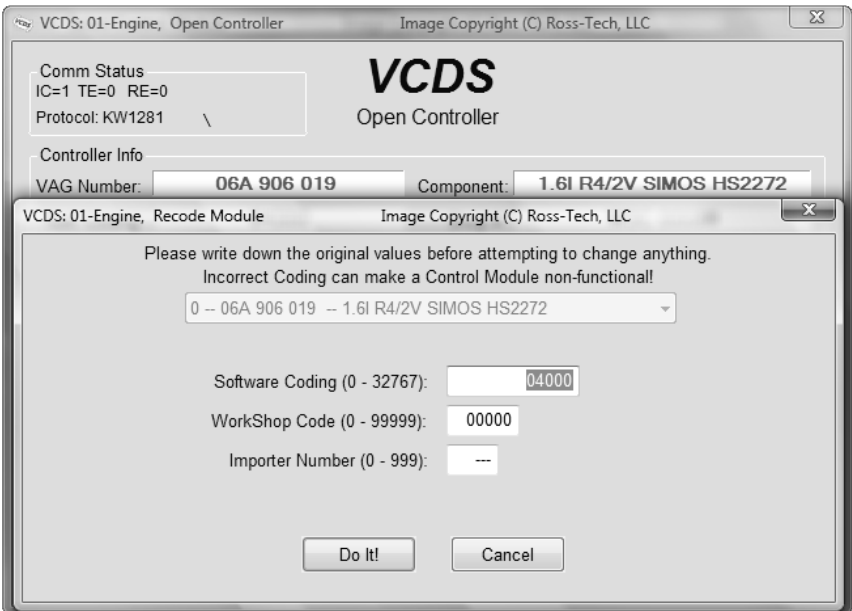
Recode is used to set various options in a Control Module. Note: Some Modules require a valid Login before you can re-code them.

Warning! You should refer to the Factory Repair Manual for your particular car (or some other documented procedure) before attempting to Recode a Control Module. At the very least, write down the original values. There is no other way to "undo" the values if what you're trying to do doesn't work out.

VCDS can show coding "charts" when appropriate information is available in a Label File for the control module in question. Up to 20 lines of coding chart data can be included in a Label File. This data is shown in a balloon on the coding screen. ►
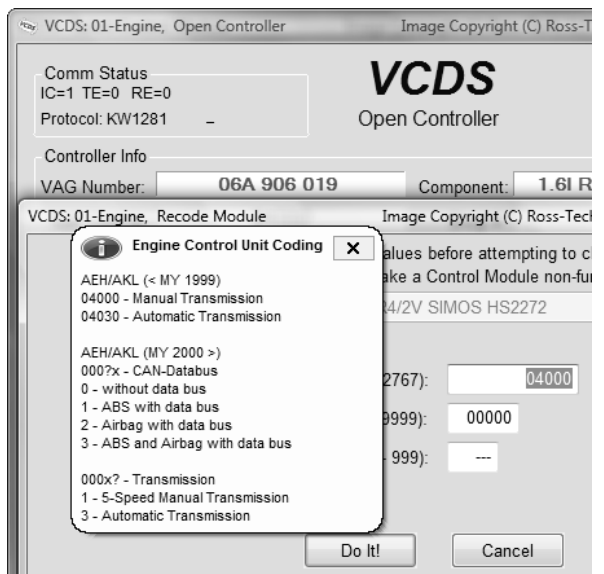
Recode cont. - Section 18-B

A feature unique to VCDS: You can leave the WorkShop Code unchanged, or enter any workshop code you desire. Certain other programs always leave a tell-tale WSC when you re-code a module. The Importer Number is only relevant for recoding controllers that use KWP-2000. By default, this will remain unchanged unless you have set up an Importer Number in the Options screen.
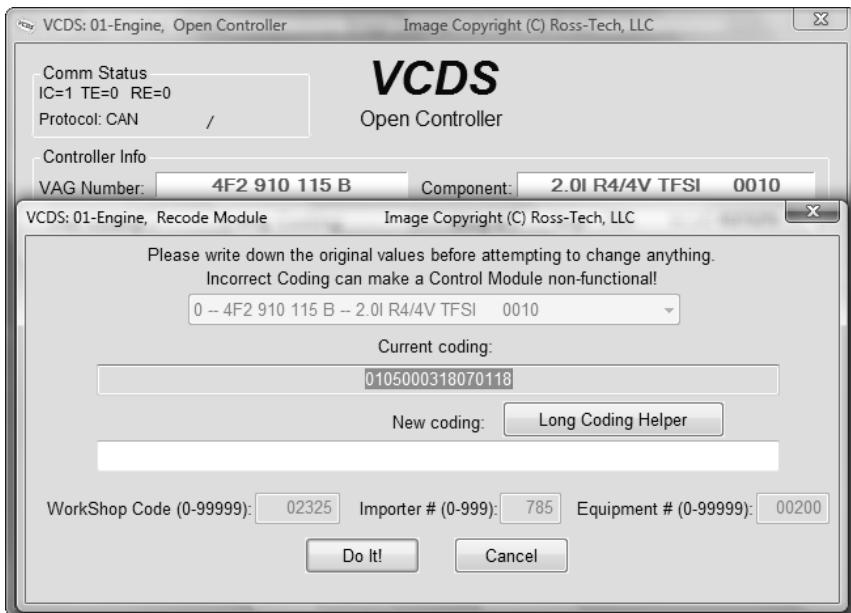
Airbag Coding:

When coding new Airbag Modules in many VW models, VCDS can "Suggest" an appropriate Coding value. Disclaimer: We cannot guarantee that the coding which VCDS may suggest will be correct, but there should be no harm in trying it. If it's not correct, the control module should refuse to accept it and the coding will remain at 00000. ►
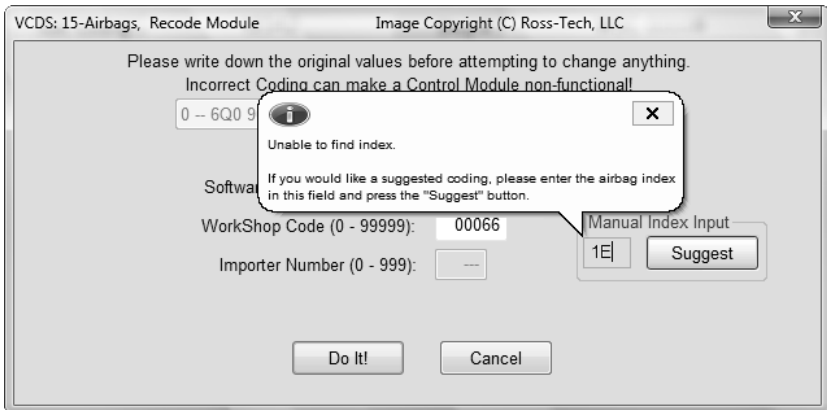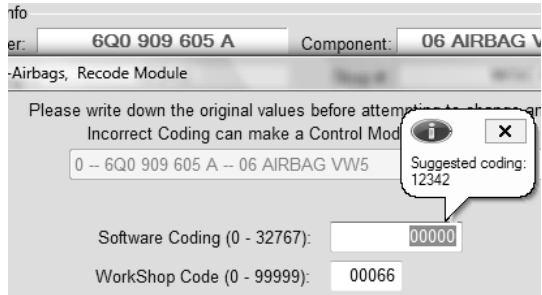

In cases where VCDS would offer Airbag module coding suggestions but cannot determine the Index automatically, VCDS gives you the ability to manually enter an Index (found on the Airbag controller sticker or work order) to get the suggested coding

Long Coding. This function is needed to Recode some control modules in the newest cars that use CAN for diagnostics.   Due to the complexity of Long Coding strings (up to 255 bytes of hexadecimal data) we've accommodated (and urge) the use of Copy & Paste in this function and usage of the Long Coding Helper.

VCDS: 01-Engine, Open Controller	Image Copyright (C) Ross-Tech, LLC	

Comm Status
IC=1 TE=0 RE=0
Protocol: CAN   /

VCDS
Open Controller

Controller Info
VAG Number: **4F2 910 115 B**   Component: **2.0I R4/4V TFSI   0010**

VCDS: 01-Engine, Recode Module   Image Copyright (C) Ross-Tech, LLC

Please write down the original values before attempting to change anything.
Incorrect Coding can make a Control Module non-functional!

0 -- 4F2 910 115 B -- 2.0I R4/4V TFSI   0010

Current coding:
0105000318070118

New coding: Long Coding Helper

WorkShop Code (0-99999): 02325   Importer # (0-999): 785   Equipment # (0-99999): 00200

Do It!   Cancel

Long Coding Helper is used with applications such as Niels Ezerman's excellent LCode.exe (included with this distribution of VCDS):
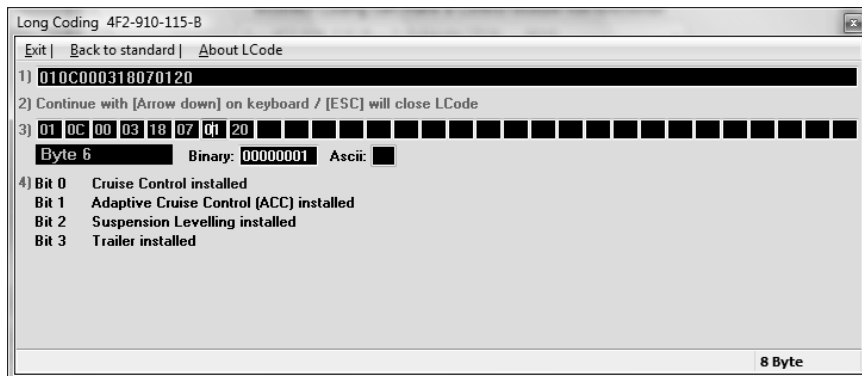
Long Coding 4F2-910-115-B

Exit | Back to standard | About LCode

1) 010C000318070120

2) Continue with [Arrow down] on keyboard / [ESC] will close LCode

3) 01 0C 00 03 18 07 01 20

Byte 6   Binary: 00000001   Ascii:

4) Bit 0   Cruise Control installed
   Bit 1   Adaptive Cruise Control (ACC) installed
   Bit 2   Suspension Levelling installed
   Bit 3   Trailer installed

8 Byte

Recode cont. - Section 18-D

After making the desired changes in the Long Coding helper, closing that application (by using the [ESC] key on your keyboard or by clicking the Windows X box on the top right of the screen or clicking the Exit button on the top left of the screen) will send your new Coding value back to the Coding screen.

Coding of Slave Modules. On the latest cars, many "slave" modules are codeable. The coding screens (both regular and "long") will present a drop-list of available modules which can be selected for coding:

Recode cont. - Section 18-E

The **Battery Coding Assistant** is a subset of the Recode function that is used for cars that require a replacement battery to be coded in the 61-Battery Regulation module:


VCDS: 61-Battery Regul., Open Controller — Image Copyright (C) Ross-Tech, LLC

Comm Status
IC=1 TE=0 RE=0
Protocol: CAN   /

VCDS
Open Controller

Controller Info
VAG Number: 4F0 910 181 E   Component: ENERGIEMANAGER H12 0490

VCDS: 61-Battery Regul., Recode Module   Image Copyright (C) Ross-Tech, LLC

VCDS: 61-Battery Regul., Battery Coding   Image Copyri...

Part Number(10 or 11 digits): 4F0915105C

Serial Number (10 digits): 2502160104

Vendor: Varta
Varta
Moll
Banner
Exide
JFF, Boading

WorkShop   OK   99): 54321

Recode cont. - Section 18-F

The **Gateway Coding** function is a subset of the Recode function. In some new vehicles like the 8T0 (Audi B8 platform), the Gateway Installation is not accessible via Long Coding. In such cases, use the **[Gateway Coding]** button in the Open Controller screen for CAN Gateway to access this screen:

Use the **[Do It!]** button to save the new Soft Coding to the controller and return to the Open Controller Function screen.

Use the **[Cancel]** button to return to the Open Controller Function screen without saving.

VCDS – Adaptation / Long Adaptation - Section 19-A
(VAG 1551/1552 function 10)
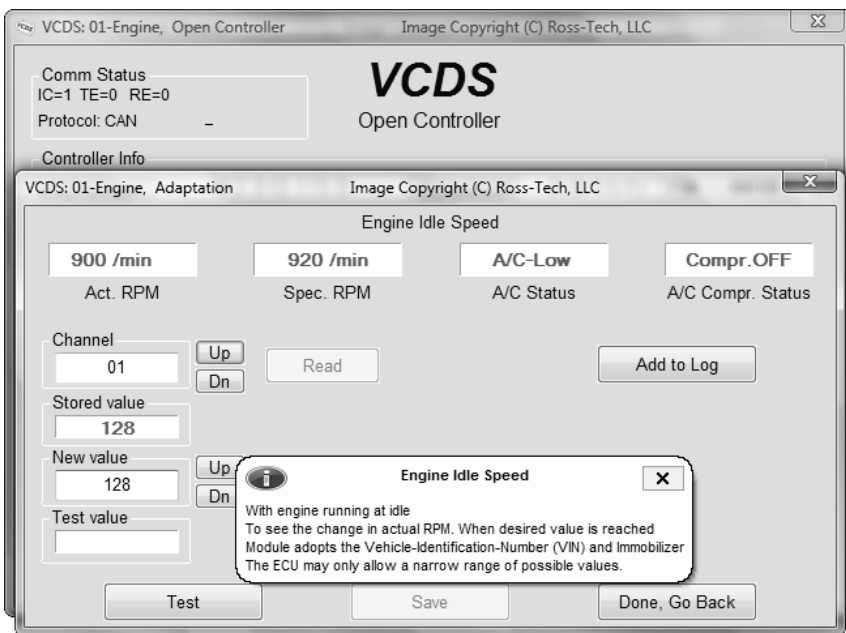
The Adaptation function allows you to alter certain values and/or settings in control modules that support it.

Warning!
You should refer to the Factory Repair Manual for your particular car (or some other documented procedure) before "playing" with the Adaptation function. However, many available Adaptation Channels are totally undocumented!

You can use the **[Up]** and **[Dn]** buttons next to *Channel Number* to scroll through all 99 possible channels, or you can manually enter a channel number and click **[Read].** If a channel exists, VCDS will show you the *Stored Value*. If a channel does not exist, the Stored Value will show as "N/A". Other data the controller may or may not send will be decoded and shown in the four display fields at the top of the screen.

Label Files can support values and description for Adaptation channels. This help chart is displayed in a balloon.

Once you have reached a channel of interest, you can use the **[Up]** and **[Dn]** buttons next to *New Value* to incrementally change the value. Or you can directly enter a *New Value* and click **[Test]**. This will tell the controller to temporarily use the new value so you can evaluate its effects.

When you are satisfied with the effect of a *New Value*, you can store it in the Controller permanently by clicking **[Save]**.

Adaptation cont. - Section 19-B

If you'd like to record just a snapshot in time of the current readings in each group, click on **[Add to Log].** This will save the results to your PC, typically to your C:\Ross-Tech\VCDS\Logs directory.

Notes:
Channel 00 is a special case. Performing a **[Save]** to Channel 00 resets all adaptation values to their original factory defaults. This only works in controllers that support this function, see your Factory Repair Manual to find out if this procedure applies to each controller in your vehicle.

Some Engine and Immobilizer controllers will require a valid Login before permitting you to **[Test]** or **[Save]** Adaptation values.

Values put in with **[Test]** but not Saved will persist until controller is powered-down.

Long Adaptation is a subset of the Adaptation function and is used/needed (for example) to balance the fuel injectors on Common-Rail TDI engines (such as the BKN). It is also used for the CAN Gateway of new vehicles like the Audi A5 as shown here:

VCDS: 19-CAN Gateway, Long Adaptation	Image Copyright (C) Ross-Tech, LLC

N/A	N/A	N/A	N/A

Channel
08   Up Dn   Read   Add to Log

Stored value
03030101010384003C000A00020190

New value
03030101010384003C000A00020190

Test value

Test   Save   Done, Go Back

Click **[Done, Go Back]** to return to the Open Controller Function Screen.

VCDS - Security Access Screen - Section 20-A
(VAG 1551/2 Function 16, KWP-2000 only)

VCDS: 01-Engine, Open Controller	Image Copyright (C) Ross-Tech, LLC	

Comm Status
IC=1 TE=0 RE=0
Protocol: CAN   /

VCDS
Open Controller

Controller Info

VAG Number:	4F2 910 115 B	Component:	2.0l R4/4V TFSI 0010
Soft. Coding:	Long Coding	Shop #:	Imp: 785 WSC 02325
Extra:			
Extra:	Geraet 00200		

VCDS: 01-Engine, Security Access	Image Copyright (C) Ross-Tech, LLC	

Most Controllers only allow one access attempt. If an incorrect access key
is entered, you will have to leave the ignition ON for at least ten minutes before
trying again. Refer to Service Manual for a valid access key.

Enter security access key (0 - 99999):   01283   or   Use 7-digit PIN/SKC

Do it!   Cancel   Option:

The Security Access Function must be used on some (but not all) KWP-2000 Control Modules before you can Recode or change Adaptation values. On others, it "enables" certain features like cruise control. Valid Login codes can be found in the Factory Repair Manual for your car.

Balloons: VCDS can show Security Access "charts" when appropriate information is available in a Label File for the control module in question. The balloon will appear when the mouse cursor is hovered over the Enter security access key field.

The Security Access Function supports 7-Digit SKCs.   This is needed for Immobilizer Functions (such as key programming) on the latest vehicles like the Touareg.

For more information, see section 15 in this manual for the 7-digit PIN/SKC function.

The Option field is only to be used if you are given specific instructions from Ross-Tech.

Use the **[Do It!]** button to save the Login and return to the Open Controller screen.

Use the **[Cancel]** button to cancel the Login and return to the Open Controller screen

VCDS – Auto Scan - Section 21-A
(VAG 1551/1552 function 00)

This function scans each controller in the vehicle to retrieve controller information - VAG number, Component number, Soft. Coding, WSC, and fault codes.
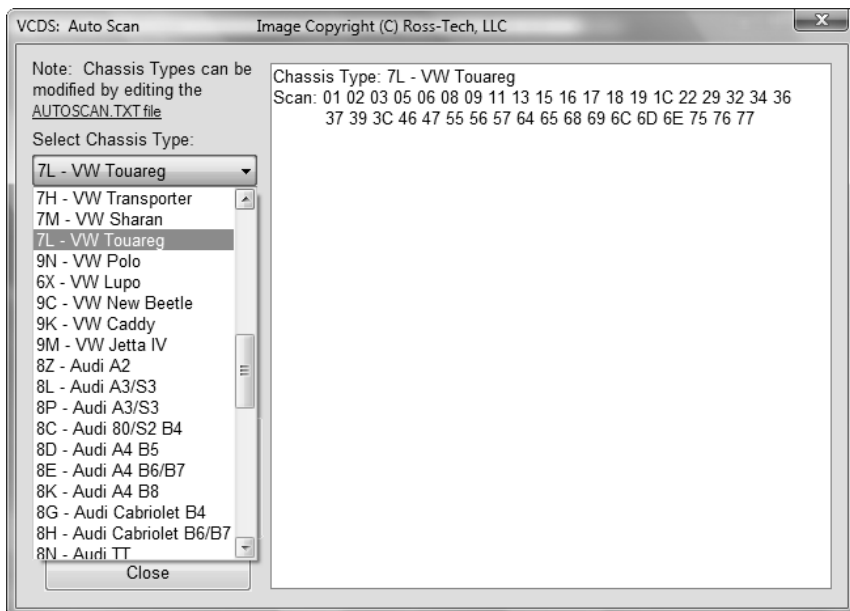
First, you must **Select Chassis Type:**
There are dozens of different control modules that exist across the entire range of VW/Audi vehicles. No one car has all Modules! Newer cars have more, older cars have fewer. Because of this, you must select a Chassis Type that contains only those modules that are plausible for a given chassis. There are some exceptions but in general, the Chassis Type is the 7th and 8th digits of the VIN number. For example WAUZZZ4F36N111022 has 7th and 8th digits of 4F and is a "4F,Audi A6 C6". For additional help determining chassis type on our Website: **www.Ross-Tech.com/vag-com/cars/applications/**

If you select **Auto Detect (CAN Only)** as the **Chassis Type** on newer cars which have a fully CAN-based diagnostic system, VCDS can automatically determine which modules are installed in a particular car and perform an Auto-Scan of exactly those modules. This can make the Auto-Scan considerably faster.

There is a file in the VCDS directory called AutoScan.txt, which contains all of the vehicle profiles. It can be edited by simply clicking on the hyperlink above the Chassis Type selection. This will open the file in your default Text editor (like Notepad) to create a custom profile for your vehicle. To help you figure out which controllers are in your car, you can run the Control Module Finder.

The **Display Freeze Frame Data** checkbox adds Freeze Frame data for Fault Codes on control modules using the KWP-2000 protocols. Not all control modules support this freeze-frame data. As a rule of thumb, cars which were re-designed after 2003 will likely have some control modules which support it, and older designs will not.   There's no harm in leaving this enabled in any case.   However, un-checking it can make the results less cluttered in a scan which contains many fault codes.

[Start]
This begins the Auto Scan. Be aware; this process can take several minutes. While the scan is running, VCDS will cycle through the Open Controller and Fault Code screens for each controller before returning to the Auto Scan screen. On newer control modules which have different Hardware and Software part numbers, Auto-Scan includes the Hardware Part Number as shown in the screenshots. Once the scan completes, Double-clicking on any of the Control Module names in **RED** will open the Fault Codes screen for that controller and allow you to clear the codes.

[Stop]
This stops the Auto-Scan.

[Gateway Installation List]

Only available only on Gateways in cars using a direct CAN connection for diagnostics This function is also accessible from the Applications Screen. This *very fast* function takes about 3 seconds to query the car's Gateway to find out what modules are installed in the car and what their status is. Any modules having fault codes should show a "Malfunction" and will be highlighted in **RED**. Double-clicking on any of the Control Module names in **RED** will open the Fault Codes 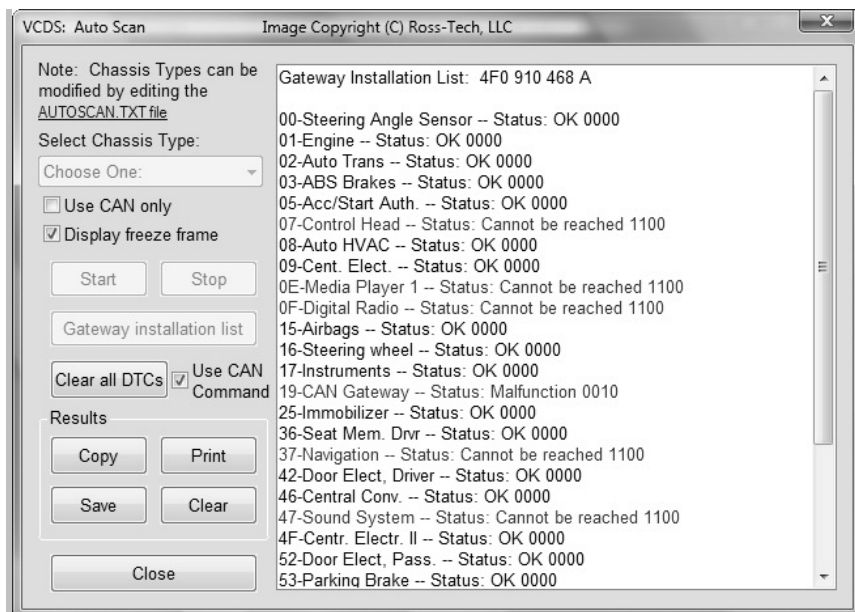screen for that controller and allow you to clear the codes. Modules are directly accessible from this screen by double clicking on the appropriate line. Changes to the Gateway Installation List can be made using the Gateway Coding function The following screen-shot is from an Audi A6 (C6/4F):

[Clear All DTCs]

This function is only available with our HEX Interfaces and is implemented in two ways. On pre-CAN-Bus vehicles, VCDS will access each control module and clear DTCs from each one individually. On vehicles using CAN-Bus for diagnostics, VCDS performs this function without accessing all the control modules individually. If you are not using a HEX Interface then you'll need to go into each module that has faults to clear them individually. This function is also accessible from the Applications Screen
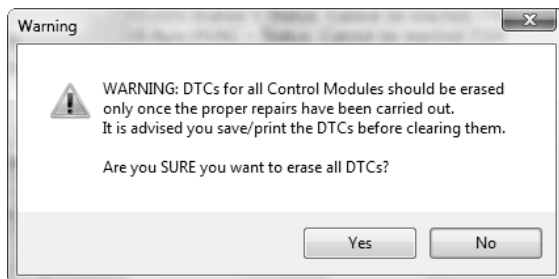
Auto-Scan cont. - Section 21-D

The VIN should be retrieved automatically from all cars which "know" their VIN. Also in control modules that provide it, engine codes and Jxxx component identifiers are shown as well.

Results:

[Copy]
If you close the Auto-Scan dialog, any data in its output box will be lost. If you would like to keep a record, click the **[Copy]** button first, then you can paste the results into the application of your choice, such as MS Word or Notepad.

[Print]
This function sends the results to your printer.

[Save]
This function saves the results to a text file in our Logs directory, typically in C:\ross-tech\vcds\Logs\

[Clear]
This erases your results. This does NOT erase the fault codes from any of the controllers. You'll need to go into each controller to Clear Codes or use the Clear All DTC's function for that.

To return to the Main Screen, click **[Close]**

```
VCDS:  Control Module Finder          Image Copyright (C) Ross-Tech, LLC          [ X ]

Note:                              Address 01: Engine
A complete scan of all               Protocol: CAN
possible addresses (01-7F)           Part No: 8T0 907 559 B
can take a  LONG time...:-)           Component: 3.2 SIMOS8.2  H04 0001
                                     Coding: 01140009180F0121
Starting Address      01             Shop #: WSC 06342

Ending Address        15           Address 03: ABS Brakes
                                     Protocol: CAN
Use CAN Only:  [ ]                   Part No: 8K0 907 379 L
                                     Component: ESP8 quattro  H03 0170
                                     Coding: 0D0500
   [      Start      ]               Shop #: WSC 06342

   [      Stop       ]             Address 05: Acc/Start Auth.
                                     Protocol: CAN
  Results                            Part No: 8K0 907 289 G
                                     Component: BCM2.01        H38 0251
  [  Copy  ]  [  Print  ]            Coding: 0F0000
                                     Shop #: WSC 06342
  [  Save  ]  [  Clear  ]
                                   Address 06: Seat Mem. Pass
                                     Protocol: CAN
   [      Close      ]               Part No: 8T0 959 760 B
                                     Component: MEM-BFS        H09 0042
```

This function cycles through each possible address in the vehicle, finding each controller
and reporting its Address, Name, Protocol, VAG Number, Component Number, Soft.
Coding, and WorkShop Code.

Note: No one car has all Modules! Newer cars have more, older cars have fewer If you
check **Use CAN Only** then the Module Finder will not check for any modules on the K-line.

[Start] begins the finder. Beware; a "full" scan can take 45 minutes or more. Of course, you
can scan selected address ranges.

[Stop] stops the finder.

Results:

[Copy] If you close the Auto Scan dialog, any data in its output box will be lost. If you would
like to keep a record, click the **[Copy]** button first, then you can then paste the results into
the application of your choice, such as MS Word or Notepad.

[Print] This function sends the results to your printer.
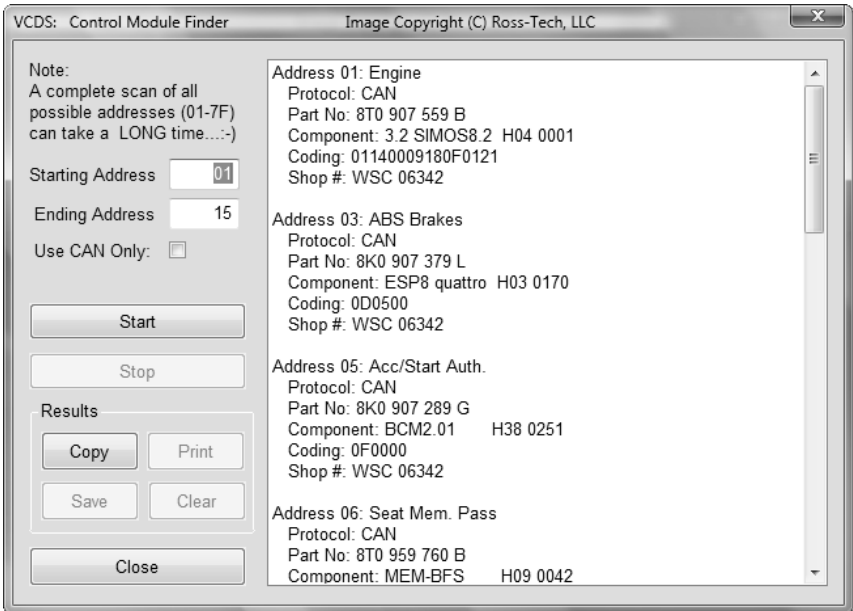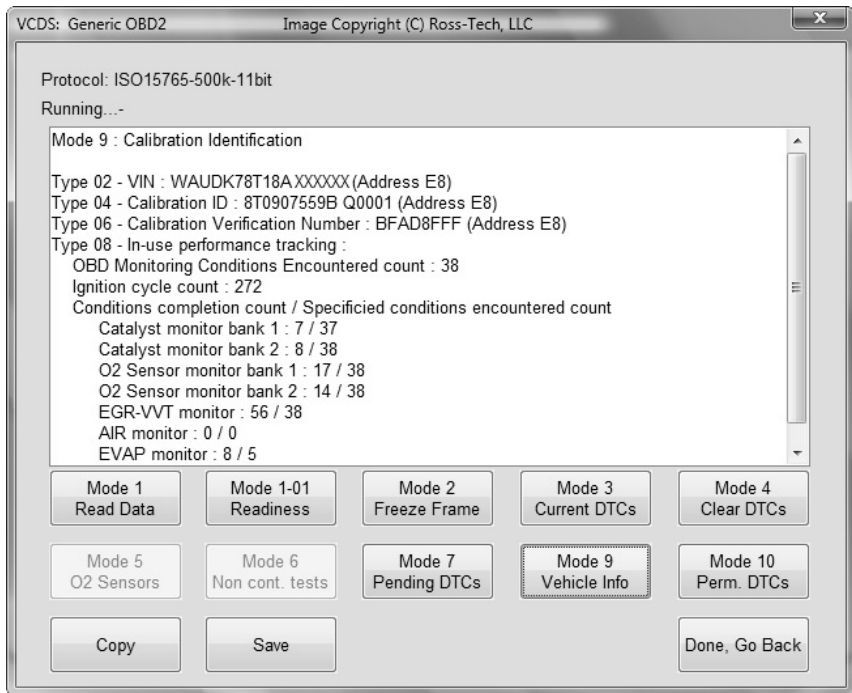
[Save] This function saves the results to a text file in your Logs directory,
typically in C:\ross-tech\vcds\Logs\

 [Clear] This erases your results.

To return to the Main Screen, click **[Close]**

VCDS – Generic OBD2 - Section 23-A
(VAG 1551/1552 Address Word 33)

```
VCDS: Generic OBD2          Image Copyright (C) Ross-Tech, LLC          [ X ]

  Protocol: ISO15765-500k-11bit
  Running...-

  ┌─────────────────────────────────────────────────────────────────────┐
  │ Mode 9 : Calibration Identification                                ▲ │
  │                                                                      │
  │ Type 02 - VIN : WAUDK78T18A XXXXXX (Address E8)                     │
  │ Type 04 - Calibration ID : 8T09075559B Q0001 (Address E8)          │
  │ Type 06 - Calibration Verification Number : BFAD8FFF (Address E8)   │
  │ Type 08 - In-use performance tracking :                             │
  │    OBD Monitoring Conditions Encountered count : 38               ≡ │
  │    Ignition cycle count : 272                                        │
  │    Conditions completion count / Specificied conditions encountered count │
  │       Catalyst monitor bank 1 : 7 / 37                              │
  │       Catalyst monitor bank 2 : 8 / 38                              │
  │       O2 Sensor monitor bank 1 : 17 / 38                            │
  │       O2 Sensor monitor bank 2 : 14 / 38                            │
  │       EGR-VVT monitor : 56 / 38                                     │
  │       AIR monitor : 0 / 0                                           │
  │       EVAP monitor : 8 / 5                                        ▼ │
  └─────────────────────────────────────────────────────────────────────┘

  ┌ Mode 1 ┐ ┌ Mode 1-01 ┐ ┌ Mode 2 ┐   ┌ Mode 3 ┐     ┌ Mode 4 ┐
  │Read Data│ │ Readiness │ │Freeze Frame│ │Current DTCs│ │Clear DTCs│

  ┌ Mode 5 ┐ ┌ Mode 6 ┐    ┌ Mode 7 ┐    ┌ Mode 9 ┐     ┌ Mode 10 ┐
  │O2 Sensors│ │Non cont. tests│ │Pending DTCs│ │Vehicle Info│ │Perm. DTCs│

  ┌  Copy  ┐ ┌  Save  ┐                              ┌ Done, Go Back ┐
```

Generic OBD-II functionality. Because many of VW's recent factory repair manuals no longer have traditional 01-Engine "On Board Diagnostic" information and have replaced it with "Generic Scan Tool" data, this has become much more important than it was in the past. Click each of the Mode buttons to access each OBD-II function.

Generic OBD-II functionality is "Supported" only on VW, Audi, Seat, and Skoda cars. It will likely work on many other brands of cars. We'd be happy to receive feedback as to what other brands and models of cars it does and does not work on, however, we do not feel obligated to make it work on other manufacturer's cars.

Generic OBD-II functionality is limited to cars using ISO 9141-2 ("CARB"), ISO 14230 ("KWP-2000") and ISO-15765 ("CAN") protocols. Our interfaces do not support the SAE J1850-VPW and J1850-PWM protocols used by most US-market pre-2008 GM and Ford products, so VCDS cannot work at all those cars. Most early (1996-2000) OBD-II compatible Chrysler cars used the compatible ISO-9141-2 while many newer Chrysler cars use the incompatible SAE-J1850 standard. Most European and Asian cars use ISO or CAN and should be compatible. Generic OBD-II compatibility was required as of model year 1996 in the USA, model year 1998 in Canada, and 2001 (gasoline) or 2004 (diesel) for in the European Market. All 2008 and newer vehicles sold in the US are required to use CAN-Bus diagnostics for Generic OBD-II so it shouldn't hurt to try this function on any brand.

Please see the FAQ question 1.10 in Section 33:
What's the difference between VCDS and an OBD-II Scan-Tool?

Generic OBD2 cont. - Section 23-B

Each Generic OBD-II mode is defined by SAE J1979 - the specification paper is available from: **www.sae.org**

Below is a brief overview of what each Mode does, refer to a Factory Repair Manual for specific information and testing steps.

Mode	Meaning
1	**Read Data** allows you to view real-time emissions-related sensor and status data reported by the ECU.
1-01	**Readiness** shows the status of each emissions test.
2	**Freeze Frame** shows the conditions present when an emissions-related fault last occurred.
3	**Current DTCs** shows the present emissions-related fault(s). VCDS gives you a checkbox to convert the code description into VW/Audi-specific ones.
4	**Clear DTCs** erases the Current and Pending DTCs, it does not repair the condition that caused them. This may erase learned Readiness as well.
5	**O2 Sensors** shows the data associated with each O2 sensor, chosen from a drop-down menu.
6	**Non cont. tests** will run a pre-defined set of tests for various emissions-related components, for example O2 sensor aging tests.
7	**Pending DTCs** are fault codes that have been identified by the ECU but are deemed not yet critical enough to trigger the MIL.
9	**Vehicle Info** can store information including the VIN, calibration versions, and tracking information. The quantity of info varies wildly between cars.
10	**Permanent DTCs** are faults so severe that they cannot be erased with a scan tool, only by the ECU itself when it has tested and confirmed that the problem has been repaired.

VC-Scope is able to graph generic OBD-2 Mode 1 data. See the VC-Scope section in Section 34 for more information.

To return to the Main Screen, click **[Done, Go Back]**

VCDS - Applications- Section 24-A
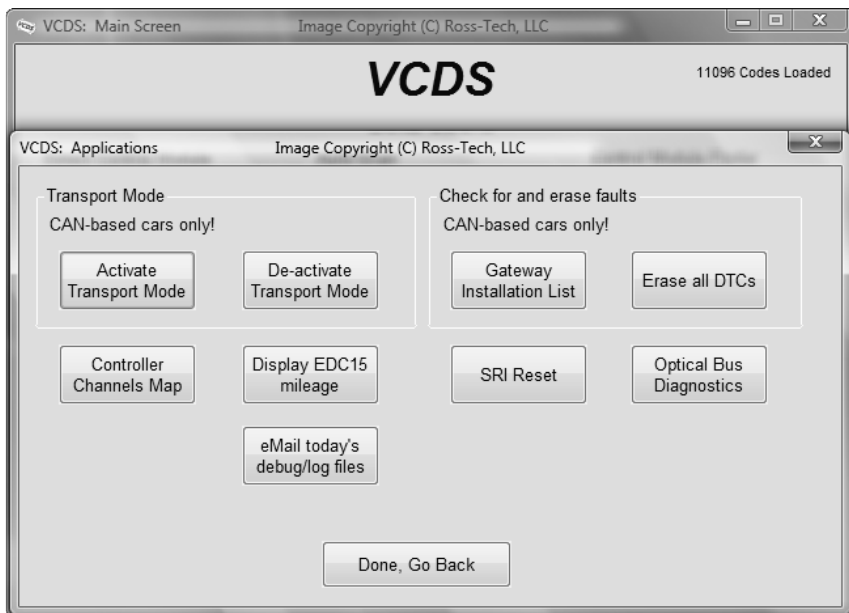
The Applications screen contains many handy functions, most of which are described in individual sections on the following pages.

Check for and erase faults

[Gateway Installation List]
Only available only on Gateways in cars using a direct CAN connection for diagnostics (like the new A8 and all Golf-5 chassis cars). This *very fast* function takes about 3 seconds to query the car's Gateway to find out what modules are installed in the car and what their status is.   Any modules having fault codes should show a "Malfunction" and will be highlighted in **RED**. Double-clicking on any of the Control Module names will open that controller. This function is explained in the AutoScan portion of this manual in Section 21.

[Erase All DTCs]
On vehicles using CAN-Bus for diagnostics, VCDS clears all of the fault codes in all control modules in the car without accessing all the control modules individually. This function is explained in the AutoScan portion of this manual in Section 21.

The **[eMail today's debug/log files]** button will open up your default email client, and will compose a message to support@Ross-Tech.com with all of the log files and debug files with the current date.

Use **[Done, Go Back]** to return to the Main screen.

VCDS – Transport Mode - Section 25-A

Transport Mode
On vehicles using CAN for diagnostics, there is a special Transport Mode that is used by the factory to put the cars into a "sleep" mode to conserve battery charge during long periods of inactivity.

[Activate Transport Mode]
Clicking this button will put applicable vehicles into Transport Mode, shutting down most systems.

[De-activate Transport Mode]
Clicking this button will "wake up" applicable vehicles from Transport Mode, powering up most systems.

This function can normally only be used on cars that have very low odometer readings.

In the B7 Audi A4, Transport Mode works a little differently. To take the car out of transport mode, go into

> **[Select]**
> **[17 Instruments]**
> **[Adaptation - 10]**
> Enter channel 99
> Put in a new value of 0
> **[Test]**
> **[Save]**
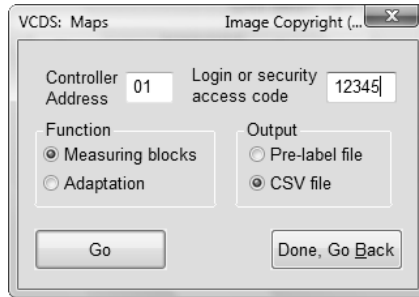
```
VCDS: Maps                Image Copyright (...    [X]

   Controller  [01]   Login or security  [12345]
   Address            access code

   ┌─ Function ──────────┐   ┌─ Output ──────────────┐
   │ ⦿ Measuring blocks  │   │ ○ Pre-label file      │
   │ ○ Adaptation        │   │ ⦿ CSV file            │
   └─────────────────────┘   └───────────────────────┘

   ┌──────────────┐              ┌──────────────────┐
   │     Go       │              │ Done, Go Back    │
   └──────────────┘              └──────────────────┘
```

[Controller Channels Map]

Rapidly scans through all 255 possible Measuring Block groups or Adaptation Channels on any ECU and writes a "map" file.   Output is your choice of .CSV or .PLB ("Prototype Label, Blocks").   Useful for creating new label files or taking a "snapshot" of all available data from an ECU.

The **[Controller Channels Map]** function found in the Applications Screen rapidly scans through all possible Measuring Block groups or Adaptation Channels on any ECU and writes a "map" file.

Choose the Controller Address (such as 01 for Engine), then any Login or security access code (not needed in most cases, contact Ross-Tech for assistance), then select either Measuring Blocks or Adaptation. Output is your choice of .CSV or .PLB ("Prototype Label, Blocks"), which is useful for creating new label files or taking a "snapshot" of all available data from an ECU.

Click **[Go]** to begin the process, the results will automatically be saved to your C:\Ross-Tech\VCDS\Logs directory.

This page contains more information about how to create Maps to help make VCDS more complete:

🌐 **http://wiki.ross-tech.com/index.php/Control_Module_Maps**

Use **[Done, Go Back]** to return to the Applications screen.

VCDS – EDC-15 Mileage Checker - Section 27-A

VCDS: Main Screen   Image Copyright (C) Ross-Tech, LLC

VCDS: 01-Engine, Open Controller   Image Copyright (C) Ross-Tech, LLC

VCDS: 01-Engine, ECU Mileage   Image Copyright (C) Ross-Tech, LLC...

30564 km
18991 miles

Note

The above mileage was independently computed in the ECU by integrating vehicle speed. Some level of discrepancy with the odometer (5%) can be expected. If the mileages differ noticeably, there can be several causes:
-The ECU was replaced in the past
-The odometer was replaced in the past
-The odometer was rolled back!

Option

Read   Done, Go Back

[EDC-15 Mileage] is found in the Applications Screen and is used to show an independent "odometer" reading stored in the ECU. EDC-15 is found in some 2000 and newer engines but is NOT used in US-market Mk4 PD engines nor is it used in the newest vehicles that use CAN-Bus diagnostics like the Mk5 Jetta TDI. This can be useful as a means of cross-checking the mileage on a used car before making a purchase, particularly in Europe where odometer fraud is rampant.

The Option field is only to be used if you are given specific instructions from Ross-Tech.

Use **[Done, Go Back]** to return to the Applications screen.

VCDS – SRI Reset- Section 28-A

The **[SRI Reset]** function found in the Applications Screen is used to reset the Service Reminder in vehicles so equipped. The function will automatically access the Instrument Cluster and will retrieve SRI instructions from the Label File as well as current values stored in the Cluster. New values can be entered by hand, or the user can select the drop-down list to choose from a number of functions which will load standard value sets.

VCDS: SRI Reset	Image Copyright (C) Ross-Tech, LLC			

Operation

Simple Service Reset ▼

Channel	Description	Unit	Current val.	New val.
02	Service Reminder Status		1	0
40	Mileage since Service	miles x100	79	---
41	Time since Service	Days	609	---
42	Min Mileage to Service	miles x100	50	---
43	Max Mileage to Service	miles x100	50	---
44	Max Time to Service	Days	365	---
45	Oil Quality		1	---
47	Soot Quantity	km x100	0	---
48	Thermal Load	km x100	254	---
49	Min Time to Service	Days	365	---

Perform SRI   Done, Go Back

New values can be entered by hand, or the user can select from a number of functions which will load standard value sets.

SRI Reset cont. - Section 28-B

VCDS: SRI Reset   Image Copyright (C) Ross-Tech, LLC

Operation

Change to Flexible Intervals (Miles),Gasoline ▼

Simple Service Reset
Change to Fixed Intervals (Kilometers)
Change to Flexible Intervals (Kilometers),Diesel
Change to Flexible Intervals (Kilometers),Gasoline
Change to Fixed Intervals (Miles)
Change to Flexible Intervals (Miles),Diesel
Change to Flexible Intervals (Miles),Gasoline

40	Mileage since Service	miles x100	79	---
41	Time since Service	Days	609	---
42	Min Mileage to Service	miles x100	50	90
43	Max Mileage to Service	miles x100	50	190
44	Max Time to Service	Days	365	730
45	Oil Quality		1	2
47	Soot Quantity	km x100	0	---
48	Thermal Load	km x100	254	---
49	Min Time to Service	Days	365	365

[Perform SRI]   [Done, Go Back]

Upon clicking **[Perform SRI]** the new values will be stored in the (often less than intuitive) sequence required.

Note: The Service Reminder Function requires supporting data in Label files. VCDS ships with a fairly comprehensive set, but we doubt we've managed to cover every possible car. If you encounter a car that has Service Reminders (not all cars have this) for which the SRI Reset function is not accessible, please send us a Controller Channels Map of the Adaptation channels from the Instrument Cluster in that car.

This page contains more information about how to create Maps to help make VCDS more complete:

http://wiki.ross-tech.com/index.php/Control_Module_Maps

Use **[Done, Go Back]** to return to the Applications screen.

VCDS – Optical Bus Diagnostics - Section 29-A

Controller	Electrical	Optical
19-CAN Gateway	OK	OK
07-Control Head(High/D3)	OK	OK
0E-Media Player 1	OK	OK
77-Telephone	OK	OK
47-Sound System	OK	ERROR
67-Voice Control	OK	ERROR
56-Radio	OK	OK
37-Navigation	OK	OK
0F-Digital Radio(SAT)	OK	OK

Diagnostic Type
- ◉ Standard
- ○ 3dB Attenuation

Start

Copy

Save

Done, Go Back
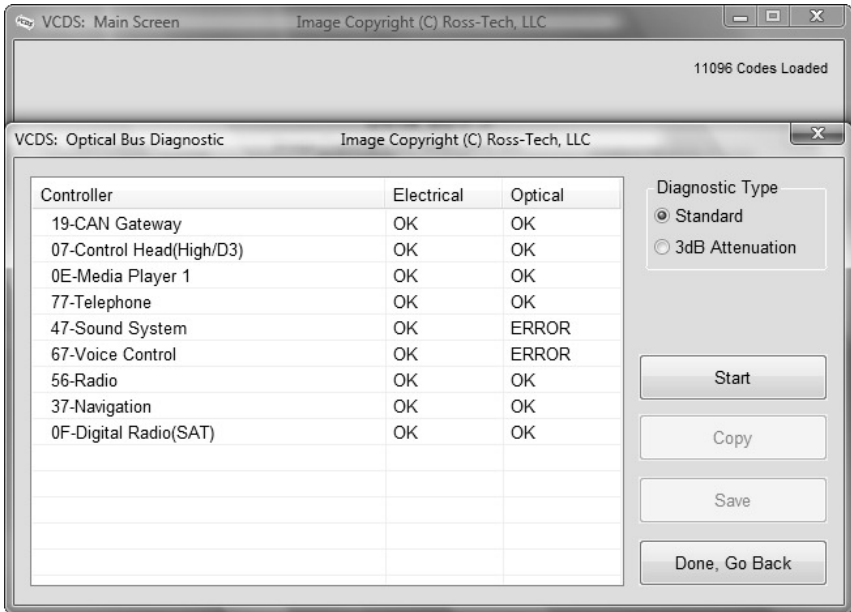
The **[Optical Bus Diagnostics]** function found in the Applications Screen is used on models with a MOST bus to narrow down the location of a break in the network. Many control modules will be completely inaccessible via conventional diagnostics if there's a break in the MOST bus.

The above example shows a 4F Audi A6 with a break in the MOST bus. In this case, it's clear that the modules are all electrically OK, but the Optical bus is broken between the Sound System module and the Voice Control module.

You may change the Diagnostic Type from "Standard" to "3dB Attenuation" if your results are not conclusive. The attenuation means all modules are sending with less output (initiated by the MOST master), but the individual MOST participating control modules can attenuate individually to check if individual modules are responsible for problems.

Click on **[Start]** to begin checking the controllers on the bus..

[Copy] will copy the results to Windows Clipboard. Once you have pressed the Copy Codes button, you may paste the results into the application of your choice, such as MS Word or Notepad.

[Save] will save a plain-text report to your PC, typically in this directory: C:\Ross-Tech\VCDS\Logs

Use **[Done, Go Back]** to return to the Applications screen.

VCDS – Options – Section 30-A

On this screen you can set a number of Options organized by tabbed sections that must be used the first time you run VCDS on a PC.

Options Screen cont. – Section 30-B

Port and Protocol Options

Select Port

Set the COM Port to which you have connected the Interface Adapter. Serial Ports should be assigned to COM1 through COM4 (most often COM1 by default) while USB has only its eponymous choice. Make sure the ignition is turned on and the interface plugged into the vehicle, then click **[Test]** to see if VCDS can find the interface. See the Getting Started section in this manual for more information.
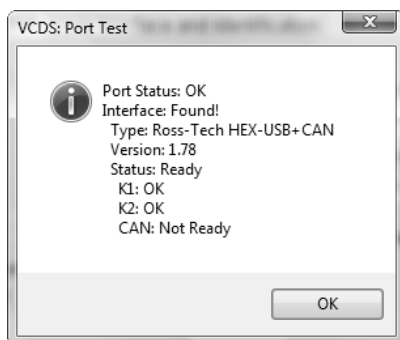
The **[LEDs]** button causes the LED on the Interface to blink and may be useful for testing a port's outputs for troubleshooting certain connection issues.

Protocol Options

- **Start Baud** is the first baud rate that VCDS will try when connecting to a controller. The current default value is 0. This means VCDS will determine the correct start baud on its own. With our current Interfaces, this field is unavailable.

- **KW2 Delay** has to do with the amount of time used during the initialization of a session between the PC and the car. The current default value is 30. Do not change this value from the default unless you are having difficulties communicating with a particular controller. Contact us for advice if you are.

- **TST Addr.** has to do with the packet addresses used by KWP-2000. The current default value is -1. Do not change this value from the default unless you are having difficulties communicating with a particular controller. Contact us for advice if you are.

- **Debug Level** controls how much debugging information VCDS records. A zero in this field (the default) means NO debug output will be generated whatsoever. This should decrease VCDS's susceptibility to interference by things like virus scanners (except when logging data). There should be no reason to set Debug to anything other than zero unless you are instructed to do so by Ross-Tech.

Options Screen cont. – **Section 30-C**

Protocol Options cont.

- **Blk Int** affects the protocol timing. The current default value is 55. To get the highest sample rate possible in the Measuring Blocks screen, set this to 25. Note, however, that this may cause unreliable communications with some controllers.

- **Char Int** also affects the protocol timing. The current default value is 1. To get the highest sample rate possible in the Measuring Blocks screen, set this to 0. Note, however, that this may cause unreliable communications with some controllers.

- **KP2 Time** only applies to controllers using the KWP-2000 protocol. The current default value is 25. Decreasing it increases the sample rate in Measuring Blocks on control modules that use the KWP-2000 protocols. The default value should work for all applications, but if it does not, you can always increase it again (to a maximum of 99).

- **CAN Timeout** defines how much longer than normal VCDS is going to wait for the module to respond to a given message. Do not change this value from the default value of zero unless you are having difficulties communicating with a particular controller. Contact us for advice if you are.

Init Parameters

- **Bypass OBD-II Fastinit** should only be checked if you are experiencing difficulty connecting to a vehicle using generic OBD-II.

- **Force K on Engine** is used on Engine controllers that have a choice of using CAN-Bus or k-line for diagnostics, such as the Mk5 Jetta 2.5l. This feature can be useful since the K-line often delivers faster sample rates while datalogging than does the CAN-Bus on modules that support both. Since some modules talk only via CAN, this box is unchecked by default.

- **Bypass CAN Init** should only be checked if you do not want VCDS to try connecting to vehicles using the CAN-Bus

- **Force Dumb Mode** is used to prevent VCDS from automatically determining the baud rate for connections. You should not check this unless instructed to do so by Ross-Tech

Reduce CPU Usage checkboxes will greatly increase responsiveness of other apps running at the same time as VCDS. The disadvantage is a somewhat reduced sample rate.

- **KWP-1281:** The default state for this box is unchecked. This reduces CPU usage when connected to controllers using KWP-1281. Using this feature *may* make the session with some control modules unreliable.

- **KWP-2000:** The default state for this box is unchecked. This reduces CPU usage when connected to controllers using KWP-2000.

[Restore Defaults] will reset all Protocol Options (except WorkShop Code and VZ/Importer number) to their "as-delivered" settings.

If you right-click on the VCDS icon on the top left of the VCDS screen, you can select "Delete config file and close". This can be very handy, especially if you have made the window size too large.

User Interface and Identification

    Workshop Identification

- **Shop Name** is displayed on reports, such as the Fault Code Report.

- The **WorkShop Code** (known as the WSC) is found on the Admin screen of a dealer's VAS-5051, as well as on the dealer's stamp. The default value is 00000. For example, using the stamp below, the dealer's number is 401/742. To derive the WorkShop Code, drop the first digit and use the remaining digits in order. In this example, Evergreen Terrace Volkswagen has a WSC of 01742. This only applies to US VW dealers. Canadian dealerships use a 4-digit number on their stamp. To find the WSC, place a 9 before their number. ►

> 401/742
> **Evergreen Terrace**
> **Volkswagen, Inc.**
> **Springfield, USA**

Note: If you are an individual user or independent mechanic, just leave the WorkShop Code and VZ/Importer number set to "00000" and "000" respectively. This allows VCDS to operate in "stealth" mode, keeping whatever WSC and VZ that was already in the controller. If you are using VCDS at a Dealership, enter your Dealer's Workshop Code and VZ. The Work Shop Code and VZ are not easily changed once set on this screen. Contact us for advice if you need to do so.

- The **VZ/Importer** number is essentially a "region code" extension to the Work Shop Code (should be 444 for US, 999 for Canada). The default value is 000.

- The **Equipment Number** field is used most often when coding new control modules. Some control modules will refuse being recoded if they're not given an equipment number (sometimes they require a non-zero WSC and Importer number too). In those cases, any numbers should work. The default value is 00000.

    User Interface

- **Disable Sounds** Checking this box will prevent VCDS from making sounds when an operation is complete, for example at the end of an AutoScan or at the end of Acceleration Measurements. This will not prevent Windows sounds when an error message pops up.

- **256 Color Mode for old PCs** This display mode changes the background color from blue to white, and looks better on some older monitors. The change will take effect after you close and restart VCDS.

- **Left Margin Printing** This is the number of spaces that printed pages are shifted to the right.

- **Window Size** This function allows you to change the apparent size of the VCDS window on your screen. Adjust this in small increments since it is possible to make VCDS so large that it is much bigger than your screen! To see the resizing take effect, click Save, then close VCDS. When you restart, the new window size should be shown.

Options Screen cont. – Section 30-E

User Interface and Identification cont.

Check for Free updates

If an internet connection is available, VCDS will notify the user when updates are available and will ask permission to download and install updates. Because we do not want to burden customers' PCs with a resource hogging update scheduler, VCDS will only check for updates when it is started and when the PC is rebooted.   We've tried to make this as unobtrusive as possible -- VCDS will not complain if there's no internet connection available -- you just won't get updates.

Select from the drop-down menu to determine if, and when VCDS should automatically check for updates when the program starts. You can also click the **[Check for updates now]** button to manually initiate a check.

Note: Some 3rd-party firewall software may complain that VCDS is trying to access the internet -- if this happens you should either tell the firewall to allow it, or turn off Automatic Updates.

[Save] causes the current options to be stored. Note that until you have Saved your preferences, all buttons on the VCDS Main Screen will be grayed-out except Options.

[Apply] lets you use and test the options without storing them. The next time you restart VCDS, the options previously stored will be used.

[Cancel] takes you back to the Main Screen without any effect.

VCDS - About Screen – Section 31-A
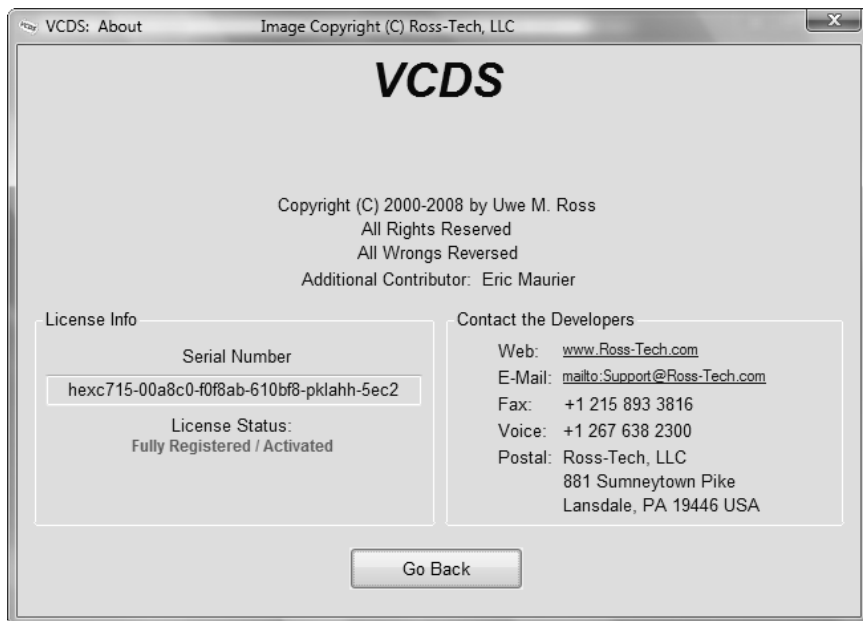
License Info

- The **Serial Number** will initially be "Please test on car to see serial number" until you have connected to a car and checked fault codes in a controller. After you have done this, you will have a Serial Number composed of letters and numbers..

- **License Status** should always be Fully Registered / Activated, with all of our Current Interfaces since they store their own activation. If it says Not Tested, then you will need to connect to a controller (like 01-Engine) and for example check Fault Codes. Afterward, the Serial Number should be visible.

On this screen, you will also find a Copyright Notice, License info, and Contact Information.   The Web and E-Mail "links" open up your default browser or default email program, respectively and can be used if your PC is connected to the Internet.

To return to the Main Screen, click **[Go Back]**.

VCDS Problems & Issues – *Section 32-A*

Possible Issues, all versions:

- We have some reports indicating that VCDS does not get along with the Zone Alarm firewall application. If you are using Zone Alarm, turn it off while using VCDS.

- Virus Scanners: Many virus scanners will adversely affect performance when logging data and performing other tasks which require VCDS to write data to the disk. If in doubt, turn off virus scanners while using VCDS -- your PC cannot get a virus from your car.

- Windows 2000: Service Pack 4 is strongly recommended and may be required when using USB interfaces.

- 1991-1994 TDI Engines: We have a number of reports indicating that VCDS doesn't work with these using a "dumb" Interface. For these vehicles, you will need to use one of our HEX Interfaces.

- If when you try to connect to a control module, you get the error message "**Can't Synch Baud Rate**", go to the Options Screen and try setting the **Start Baud** to 9600. If 9600 doesn't work, also try 4800 and 1200. Turn the car's ignition OFF and back ON after each failed attempt to connect!

1997 VW Passat B5 Central Convenience System
These controllers seem to have a bug that causes them to drop the communications session when VCDS requests the door-slave controller "Extra" info. A work-around is available in Version 0.70e which simply does not request any "Extra" info. If you have a 1997 B5 Passat (non-US models only), use 0.70e on the Central Convenience system. 1998 and newer Passats do not have this problem.

1990-1993 VW Cabrio/Cabriolet (Mk1) Airbags
These controllers do not communicate with VCDS. In fact, they do not communicate with Volkswagen's VAG-1552 scan tool either, unless the 1552 has an old, outdated program card installed.

2004+ Bluetooth/Phone prep modules, part number 8P0-862-335

When used in the A4, A6 (C4/4B chassis only) and TT (8N chassis only) these modules may have problems communicating depending on the firmware version in the module. We are looking at various work-arounds. Always try the latest version (Beta or Release). These modules work fine when installed in cars where they communicate via CAN (8P chassis A3, etc).

2003+ 01J (CVT) Transmissions
These have rather unusual timing requirements. When used with a HEX Interface, increase **Char Int** on the Options Screen to approximately 4 or 5.

Problems/Issues cont. – *Section 32-B*

Audi Concert and Symphony Radios
These are made by Matsushita.   The **Concerts** have blatant bugs in the diagnostic
protocols.   We've added one work-around to the low level protocol drivers that works in
some, but not all Concerts, and it is not 100% reliable in any case.

Some Concerts occasionally get "stuck" in an undesirable mode after attempting
communications. If your Concert gets "stuck", the way to reset it is to remove all power
from the radio for at least 10-15 seconds. This can be done by any of these methods:

- Removing the radio from the car.
- Disconnecting the car's battery
- Pulling the fuse for the radio.

Note: Some radios will require you to enter the "security code" using the radio's front panel
after losing power. See the your owner's manual for the radio for instructions.

It appears that there is something not quite up to snuff in the **Symphony's** ability to drive
the K-line. We've had some reports that they work better with non-optically isolated
interfaces, and they may work better with the engine running (which means there is a
higher voltage on the VBatt lines in the car).

1996-1997 Audi A6 2.8L 12V V6 Engine
There is a bug in the Hitachi ECU that does not allow reliable monitoring or logging of
multiple measuring groups. For these vehicles, we recommend only viewing or logging one
group at a time.

1994-1997 Audi C4 (A6/S6) Instrument Clusters
These have a high bit-error rate. We suspect they use a software-UART and "stretch" bits
sometimes. The error-detection/correction logic built into VCDS's low-level protocol drivers
as of version 0.70 seems to take care of this in a majority of cases, but we still had few
reports of customers not being able to communicate with these clusters.   In version 0.75
or newer, please ensure that **Char Int** on the Options Screen is set to approximately 3
(which is the default).   On some PCs, it may be necessary to adjust this value to
something other than 3. On very fast PCs try a higher value than 3. On very slow PCs, try
a value lower than 3.

We have received reports from users who cleaned the terminals on the wiring connections
at the back of their instrument cluster with electronics cleaner. This appeared to fix the
problem with communicating with these clusters.

1992-1994 2.6L V6 Engine (non-US only)

VCDS cannot communicate with some of these ECUs while using a "dumb" Interface.
These ECUs (made by Hella) are so incredibly fussy about the protocol timing that there is
no way to get them to work with a "dumb" interface and an application running in user-
mode under Windows. For vehicles with these engines, we recommend one of our HEX
Interfaces, which work great. Note, if you use a USB Interface, we HIGHLY recommend the
use of Windows XP or Vista. Use of other versions of Windows may prevent VCDS from
successfully working with these ECUs.

1.1 Will VCDS work with my car?

VCDS will work with most Volkswagen and Audi models sold **World-Wide** 1994 through 2008. It will work with some cars all the way back to model year 1990. It will also work with most late-model SEAT, and Skoda models sold in markets other than North America. If your VW or Audi has a 16-pin "OBD-II style" Data Link Connector, VCDS will definitely work. If your car has the old "2x2" Data Link Connection, check if there is a wire going to each pin. If there are four wires, VCDS should work. If there are only three, it won't.

🌐 Please see these Application Charts at:
 www.Ross-Tech.com/vag-com/cars/applications/ where you can select your model and see which modules can communicate with VCDS. Also see the Issues section in Section 32 for a few things that may not work as expected. If in doubt, e-mail us.

1.2 Will VCDS work even if my car is "chipped"?

Yes. If it doesn't work in a "chipped" car, the chip-vendor did something seriously wrong! Chips from reputable vendors do not interfere with diagnostic functions.

1.3 What functions are included in the current release?

VCDS is a software program that turns your PC into a sophisticated VW/Audi diagnostic tool, which performs the functions of the VW/Audi dealers' own tools. Please see the Function Chart in Section 36 for the current feature set.

1.4 What are the computer requirements?

A computer running Microsoft Windows.   A Laptop or "Tablet" computer is best, but a desktop PC can also be used. See also Question 1.7.

With a Serial interface: We recommend at least a 100 MHz Pentium (or AMD equivalent) with 16MB of RAM and Windows 98 or newer.   Windows 98, ME, 2000, XP and Vista are all fine.   As of version 8xx, we no longer support Windows 95 or NT4.

With a USB interface: We recommend at least a 500 MHz Pentium-3 (or AMD equivalent) with 64MB of RAM and Windows 98 or newer. USB interfaces work best with Windows XP or Vista on a 1 GHz or faster PC.   USB interfaces will not work at all with Windows 95 or NT4.

VCDS may work on some lesser PCs, but anything less than the above recommendations would be "unsupported" meaning if it doesn't work, please don't ask us for help.

Available disk-space should be a non-issue; VCDS requires less than 15 MB.

Screen resolution can be as low as 640x480.

If you are using a power supply for a laptop, it should be one specifically designed for that purpose, NOT a "universal" adapter.

Systems running Windows in a virtualized environment (for example Virtual PC on a Mac) are not supported. See also Question 1.8.

VCDS FAQ cont. *Section 33-B*

1.5 Should I get a Serial or a USB interface?

This depends primarily on the PC you're planning to use:

If you're using a modern PC running Windows XP or Vista, then you should probably get a USB interface.   Although USB interfaces are no faster than serial versions, it's becoming increasingly difficult to find new PC's with serial ports, so a USB interface is more future-proof.

If you're using a PC running an older version of Windows or with a CPU speed of less than 1GHz, we recommend a serial interface, requiring a Serial Port like this:
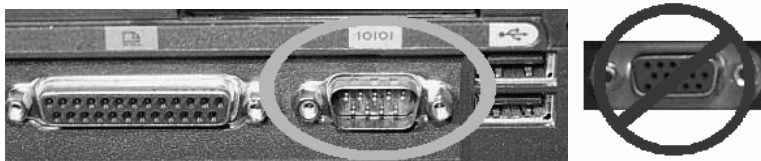
Observe the port we surrounded with the GREEN oval. Notice the 9 male pins? That's a Serial port.   Observe the port circled and crossed in **RED**. Notice the 15 female pins? That is a Monitor port and will *not* work!

USB<->Serial converters are often unable to handle the baud rate and timing requirements that are demanded by many control modules using the VAG protocol. We have had very poor results with most available USB<->RS-232 converters, therefore ***USB<->Serial converters are "Not Supported." Please do not ask us for technical assistance if you are using one of these converters.***

If you want to use one of our Serial interfaces on a PC that doesn't have a serial port, we recommend you buy a Quatech SSP-100 PCMCIA-Card. We don't sell them, but we've had excellent results with them.   We've got installation and configuration notes here.

http://www.ross-tech.com/vag-com/quatech/index.html

1.6 What if the PC I wish to use with VCDS doesn't have Internet access?
To update VCDS, you'll need to download and install the latest version from our website so you will need a way to transfer the Self-Installing EXE file to the PC that you will be using with VCDS. The file fits easily on a portable USB memory device and can also be burned onto a CD-R or CD-RW. Make sure that you do not run the EXE file until you have copied it onto the PC where you would like VCDS to be installed. You do not need to be connected to the Internet while using VCDS.

1.7 Can I use VCDS on a desktop computer?
Yes, but you will probably need to use an extension cable (included in the Pro-Kit) which you can purchase from our web store. We carry 15' Serial and 16' USB versions. We do not sell or support any other brands or models of USB extensions. if you have problems with a different brand of USB extension, the first thing we're going to tell you is to eliminate the extension.

VCDS FAQ cont. *Section 33-C*

1.8 Will there be a Mac or Linux version?

There will be no "native" Mac or Linux versions. The time and effort required to "port" VCDS to these platforms would never be worthwhile.

Linux:

One person has gotten VCDS running under Linux using WINE –

🌐 **http://autos.groups.yahoo.com/group/VAG-COM/message/4440**

A much more recent one:

🌐 **http://forums.vwvortex.com/zerothread?id=2725554**

Mac (IBM/Motorola):

Results on IBM/Motorola Power-PC based Macs using Virtual PC vary. Some people have gotten it to work, but sample rates tend to be poor and the sessions tend to drop frequently. This is likely due to the overhead and latency inherent in the virtualized environment. Some people have not gotten it to work at all.

Mac (Intel):

Reports from numerous users indicate that VCDS works perfectly on the latest Intel-based Macs when these run Windows XP natively using Boot Camp. We've had a few reports that VCDS does not work with Windows Vista under Boot Camp. Reports from people using Parallels are less favorable, most people who've tried this have not been able to get it to work at all, especially with Parallels builds lower than 3120.

The bottom line:

We do not consider any of these to be "Supported" platforms for VAG-COM. If you can get VAG-COM to work on one of these platforms, great. But if it doesn't work, please don't expect us to be able to help you.

1.9 Will there be a Windows-CE/PocketPC/WindowsMobile or Palm-OS version?

Possibly at some point in the future, but we don't have a timetable yet. We conducted a poll of current and potential VCDS users about where we should concentrate development efforts. The results:

75 % Improving and adding features to the Windows version
11 % Porting VCDS to Windows CE / PocketPC
 9 % Porting VCDS to Palm
 3 % Porting VCDS to LINUX
 2 % Porting VCDS to Macintosh

Some of our customers use VCDS on a tablet PC such as a Fujitsu Stylistic or on an ultra-portable PC such as a Toshiba Libretto. These can be purchased inexpensively on auction sites. These REAL PCs work wonderfully and have very small form factors (the Libretto is about the size of a VHS video cassette).

1.10 What's the difference between VCDS and an OBD-II Scan-Tool?

OBD-II is a government mandated diagnostic protocol that is primarily aimed at diagnosing emissions-related problems. An OBD-II scan tool will work in many different brands of cars. VCDS uses VW's proprietary diagnostic protocol and will only work in VW/Audi vehicles. Although you can use an OBD-II Scan Tool in an OBD-II compliant (1996 or newer) VW or Audi, an OBD-II Scan Tool can only talk to the engine, not the numerous other "intelligent" systems in the car. Want to reprogram your central locks or your Radio? Diagnose a problem with your ABS, Airbags, or Automatic Transmission? Re-align your Immobilizer after swapping ECU's? Reset your Service Reminder Indicators? Communicate with a pre-1996 model (not OBD-II compliant) car? An OBD-II Scan-Tool can't do any of these things. VCDS supports Generic OBD-II functionality on VW/Audi vehicles, see the Generic OBD-II section in this manual for more information.

VCDS FAQ cont. *Section 33-D*

1.11 Can I use VCDS to roll back my electronic odometer?
A: No. A brand new instrument cluster (with less than 100 km on it) can be rolled forward, one time only. Of course, this assumes that the instrument cluster is "diagnostics capable". Not all instrument clusters with electronic odometers are.

1.12 Can I use VCDS to "Flash" the chip in my ECU?
No, we have investigated flashing, but found that there are several different methods of encryption for various VW/Audi vehicles, as well as delicate licensing issues to overcome. Therefore, we do not intend to pursue flashing any further at this time. You cannot alter boost, timing, fueling, rev limiter, or speed limiter with VCDS. You should contact a chiptuner if you wish to have those parameters altered.

1.13 Is there anything else I need to make full use of VCDS?
Yes. A good **Factory Repair Manual** containing the VAG Scan-Tool procedures for your car. VCDS is a tool, not an on-line service manual. We could not possibly document everything you can do with it in every year and model of VW/Audi that VCDS can be used with. The most cost-effective manuals with good Scan-Tool procedures for US/Canadian vehicles are the DVDs from Robert Bentley Publishers. We offer these at a discount to registered VCDS users through our website. Please note that Bentley also has some publications called "Service Manuals". These tend to be less complete than the Official Factory Repair manuals and are not recommended for use with VCDS.

 Since the above Bentley Factory information only applies to US/Canadian vehicles, if your car is European-spec or from the rest of the World, they may be of little use to you.
For Rest-of-World VW, Audi, and SEAT manuals, check **erwin-portal.com**
For Rest-of-World Skoda manuals, check **skoda-haendlershop.de** (German-only).

1.14 Will VCDS work on Windows Vista
Yes, we have been testing on Vista since December of 2006 and Release 805 works fine with all flavors of Vista including 64-bit versions.

We will not support any versions older than Release 704 on Windows Vista.   If you get a new PC with Vista already on it, or if you upgrade an existing PC to Windows Vista, you should plan to use the latest version of VCDS. Since 3rd party interfaces only work with older versions of VCDS, we do not support their use with Vista even if you have previously registered the software.

All interfaces sold by Ross-Tech since February of 2004 are compatible with Release 805, as are many that we sold before then.   If you have an older Ross-Tech interface or if you are a registered user with a 3rd-party interface, upgrades are available on our website.

2.1 How do I Register/Activate my software?
All of our Current Interfaces have Activation built-in, so VCDS should always be Fully Activated once it has been tested on a car.

2.2 What's the difference between the Shareware version and the fully registered version?
When you first download a new version of VCDS from our website. it operates in a limited Shareware mode until you plug in the Interface and test it on a car. Release 805 works ONLY with genuine Ross-Tech dongle interfaces that have the software license built in.

2.3 Is Product Support included in the price?
A: Absolutely. If you have a question or problem, please post it to the VCDS mailing list, mail it to us directly, or give us a call. However, please understand that we don't know everything about every VW/Audi ever made.

2.4 Why can't I get VCDS to communicate at all?
Check the following:

- Is the adapter plugged into the car? A Serial Interface that is not plugged into the car will always be "Not Found". It gets power from the car!
- Is the car's ignition switch in the ON position?
- Is it plugged into the correct serial port? Some PC's have the ports mis-labeled.
- Are the serial ports on your PC properly configured?
- Disable Palm HotSync or Microsoft ActiveSync software!
- If you have a 1997 or newer car with an aftermarket radio, read this page:

   🌐 **http://www.ross-tech.com/vag-com/aftermarket-radio.html**
- Check our Issues section in Section 32 for any special configuration settings that may be necessary for your vehicle
- If you are using a power supply for a laptop, it should be one specifically designed for that purpose, NOT a "universal" adapter.

Note: If you test the COM port, but an hourglass appears, you may have an IRQ conflict. This may not show up in Device Manager as a conflict. But, try this:
- Start>Run>MSINFO32.EXE to bring up the System Information utility.
- Go to Hardware Resources>IRQs This should show a list of all devices by their IRQ, so you can see if there are any repeated or shared IRQs.

If all else fails, feel free to call or email us, making sure to provide the **brand and model of vehicle, brand and model of PC, and version of VCDS**.

2.5 VCDS communicates, but it's "flaky".
The diagnostic protocols require a degree of real-time response from the diagnostic tool. Certain other programs and services can prevent VCDS from responding in the timely fashion that the protocols require.   Some control modules are fussier about this than others.

Make sure you are using the latest version of VCDS. If you have any other programs running, close them. If you have any of the following active on your computer, turn them off:

- Virus Scanners
- Task Scheduler
- Microsoft Active-Synch
- Fast-Find
- Some Novell Netware network drivers
- Canon "Multipass" multi-function printer/scanner software
- Power Management -- some laptops are notoriously difficult, try running the laptop on AC power!
- Logitech QuickCam - the service in Task Manager is named "lvprcsrv.exe".

2.5 VCDS communicates, but it's "flaky" cont.

Other Tips:

- Go through all the stuff in your System Tray:

   8:59 AM

  Right-Click on each little icon. If there's a "Disable" or "Exit" option, do it!
- Windows 2000 with SP1: Install IE 6 or SP4.
- Windows 95/98/Me: Pull up a task list by pressing CTRL-ALT-DEL. Kill everything except Explorer and Systray.
- Most versions of Windows: Start -> Run -> MSCONFIG. Take a look at what other non-essential stuff Windows is loading and disable it.
- STOP or remove PCMCIA Cards, especially anything made by Xircom. Some IBM brand cards are also problematic.
- Try turning Off your COM Port's FIFO buffers. Open the properties sheet for the COM Port in Device Manager. Select the Port Settings tab. Click the Advanced button. Uncheck the "use FIFO buffer" checkbox.
- Some Windows installations, especially ones that have had numerous program installed and uninstalled over the years may be hopeless. Try installing a clean copy of Windows in a different folder than the original.
- If you have an older, slower PC running Windows XP, try setting the Display Properties>Appearance to Windows Classic Style instead of Windows XP Style.
- If you are using a USB Interface, go to Device Manager, USB Root Hub, Properties, Power Management, and uncheck "Allow Windows to turn off this device to save power"
- If your PC has multiple Serial or USB ports, try using a different port.
- If you have the Window Size on the Options screen in VCDS set to to any value other that 10 (the default) try changing it back to 10 then Test, Save, and exit out of VCDS.
- If you are using Vista, make sure to have "USB selective suspend setting" under "Power Options" set to "Disabled" as shown here:

  🌐 **http://www.ross-tech.com/vag-com/images/Vista-USB-Power.png**
- If your PC has a Shock Sensor (like certain Lenovo laptops, i.e X61), it may shut down your hard drive under hard acceleration. You may want to disable that function in the system tray.

If all else fails, feel free to call or email us, making sure to provide the **brand and model of vehicle, brand and model of PC, and version of VCDS**.

2.6 Why does my dash BEEP when I access my ABS controller?
In many vehicles, there will be a series of BEEPs from the dash when you access the ABS controller (and the ABS light will be ON while you are talking to it). This is perfectly normal and is done to notify the driver that the ABS is non-functional while in diagnostic mode.

2.7 Are there any Fault-Codes that can and should be ignored?
Yes. Most 1995 and earlier Bosch ECU's will show you a DTC **00513** - Engine Speed
Sensor (G28) if you scan them when the engine is not running. This fault code goes away
by itself once you start the engine. If this sensor were truly defective, the engine would not
run at all! Please ignore this code. Many Automatic Transmission Control Modules will
show a DTC **00526** or **17087** that indicates a faulty brake light switch. This can also be
ignored and will not appear if you press the brakes once before checking for Fault Codes.

2.8 Are there any known Bugs / Problems / Issues?
Please check the Issues in Section 32 and the Revision History Page online:

🌐 **http://www.ross-tech.com/vag-com/revisions.html**

2.9 What's the Work Shop Code?
Every VW/Audi dealer in the world is assigned a unique Work Shop Code. A brand-new
factory VAG-1551/1552 or VAS-5051/5052 scan tool will not function until a WSC is
entered, and once it has been entered, it cannot be changed. Whenever a Control Module
is Re-Coded, or certain Adaptations are performed, the scan tool sends its WSC to the
control module and the control module records it for posterity. Thus, if a scan-tool is used
to do something like disable certain airbags, in principle it should be possible to tell who
(which dealer) did that. Like the factory scan-tools, VCDS will accept a WSC once on the
Options Screen. If you enter a WSC there, it will be sent to the control modules exactly like
it's supposed to be. If you leave the WSC on the Options Screen at its default of 00000,
VCDS will operate in "stealth mode". Instead of sending a fixed WSC, it will put back
whatever was already in the control module, with one exception: If it finds the "telltale"
WSC (30011) that VWTool/VDS-PRO likes to leave behind, VCDS will replace it with
something more innocuous.

2.10 What's with the DEBUG files?
VCDS uses these to record a lot of the data being exchanged between the car and your
PC. Having these can be very useful if there is some sort of unexpected problem
communicating with a controller in your car. By default, the Debug Level is set to 0. If
you're having a problem, we may ask you to set the Debug level to something other than
zero, and to send us a specific Debug file. The best way to send Debug files is to ZIP them
first. Contact Ross-Tech if you need assistance doing this.

3.1 Do I need an Interface Adapter?
Yes. The ISO-9141 port in your car is not directly compatible with any standard PC port.
The ISO-9141 port in your car is somewhat RS-232 like, but you can't just wire up a cable --
you must put electronics in between to allow a PC to communicate with the car.

3.2 Can I use an Interface adapter that came with another software package?
No, the current version of VCDS is not compatible with 3rd party interfaces at all, even in
shareware mode. To use the latest version of VCDS, you need to use a modern genuine
Ross-Tech Interface purchased directly from Ross-Tech or from one of our distributors.

3.3 Can I buy an Interface adapter somewhere else?
No, the current version of VCDS is not compatible with 3rd party interfaces at all, even in
shareware mode. To use the latest version of VCDS, you need to use a modern genuine
Ross-Tech Interface purchased directly from Ross-Tech or from one of our distributors.

VCDS FAQ cont. *Section 33-H*

3.4 Can I build my own Interface Adapter?
No, the current version of VCDS is not compatible with homemade interfaces at all, even in shareware mode. To use the latest version of VCDS, you need to use a modern genuine Ross-Tech Interface purchased directly from Ross-Tech or from one of our distributors.

3.5 Why does VCDS require Activation?
All of our Current Interfaces have Activation built-in so users never have to worry about Activation, De-Activation, etc.   However, old VAG-COM versions prior to 5xx.x will also run through "dumb" interfaces, which are not particularly difficult to make and we would like to get paid for our work! The reality is that there are many people in this world that just won't pay for software unless they have to.   We've invested a large amount of time and expense into reverse-engineering the VAG protocols and we're trying to make a living with this product. Furthermore, we're trying to sell it at a price that makes it affordable to everyone.   The activation scheme is intended to ensure that we get paid by every user, not to make life difficult for registered customers.

3.6 What if I need to run VCDS on more than one PC?
All of our current Interfaces have Activation built-in, so you can download and install VCDS onto as many PCs as you'd like, so VCDS is fully Registered and Activated once you test it on a car.

3.7 How do I permanently move VCDS from one PC to another?
All of our current Interfaces have Activation built-in, so you can download and install VCDS onto as many PCs as you'd like, so VCDS is fully Registered and Activated once you test it on a car. If you need to run VCDS on a PC that does not have Internet access, simply download the installation program from our website and save it onto a CD or USB drive.

3.8 What's the De-Activate button for? Why would I want to do that?
All of our Current Interfaces have Activation built-in, so there is neither a need nor a choice to De-Activate.

3.9 Why has VCDS become De-Activated on its own?
All of our Current Interfaces have Activation built-in, so VCDS should always be Fully Activated once it has been tested on a car. If you have a Current Interface and VCDS has become De-Activated, please contact us

3.10 Can I sell my VCDS System to someone else?
You can sell the hardware, but the software license and support are not transferable. All of our Current Interfaces act as "dongles" for VCDS, so the software should be fully functional on any PC that meets our requirements. However, we only provide support to the original purchaser. If you purchase a second-hand "dongle" Interface and want to be a "registered user" and get technical support, you'll still need to pay $99 to register. 2nd hand owners of Ross-Tech Interfaces are not eligible for any of our Trade-In offers.

VCDS FAQ cont. *Section 33-I*

4.1 Why and How should I test VCDS prior to Activating it?
All of our Current Interfaces that have built-in Activation, are fully Registered and Activated once you test them on a car. With these Interfaces, the license is built in, you do not have to Activate VCDS, but obviously you'll want to test VCDS when you get it to make sure everything works properly. First, Download and install VCDS on your PC. Find your vehicle on the Applications Page to see which control modules are in your car. Connect your Interface to your car's Diagnostic Port and to your PC. Turn the ignition ON (turn the key so the Instrument Cluster lights up, but do not start the car -OR- start the car). Go into the Options screen, select the correct port, and click the TEST button. Ensure that VCDS finds your interface; you should see a message that says Interface Found. Now click SAVE. Select one of your car's Control Modules (note: your car will not have all the Control Modules listed in VCDS, only the ones on your car's Applications Page). After VCDS has connected, check Fault Codes. Repeat the process for each of your car's Control Modules. If you encounter problems, please try the FAQ Suggestions first. If you still have problems, feel free to Contact Us with full details about your PC and vehicle, preferably while you are in front of both.

4.2 Can I use VCDS while I am driving?
We strongly recommend against reading data while driving -- that would be an accident waiting to happen. Almost everything that changes while you drive can be LOGGED to a .CSV file, which you can analyze to your heart's content using VC-Scope or Excel (or a number of other programs) preferably while the vehicle is not in motion..:-) If you find it necessary to read data while the vehicle is in motion, we strongly urge you to use a second person -- one to drive, one to look at the PC. This second person should sit in the back seat, because a laptop used in the front passenger's seat becomes potentially lethal if an airbag drives it back into the passenger's head or torso in case of an accident.

4.3 What is "The Aftermarket Radio Problem"?
If you are working on a 1997 or newer car with an aftermarket radio read this page:

🌐 **http://www.ross-tech.com/vag-com/aftermarket-radio.html**

4.4 How do I upgrade my existing VCDS software to the newest version?
You should be able to simply Download and install the latest release of VCDS in your PC. Make sure you have exited out of VCDS before you install the new version. All of our Current Interfaces have built-in Activation, so the new version should be fully Registered and Activated once you test on a car. If you'd like to be notified when a new version of VCDS becomes available, you should sign up for our Announcements List. If you purchase a genuine Ross-Tech Interface directly from us, or from one of our Distributors, you are entitled to free software updates for at least one year from date of purchase.

4.5 What is the purpose of the "OBD-II" button? Why would I want to press it?
See the Generic OBD2 section of this manual for more information on how to use VCDS on ISO-9141 or CAN compliant OBD2 vehicles..

4.6 How do I print screens or data in VCDS?
You can print reports from several VCDS screens. You can also save data to a Log file and print using a spreadsheet program. To print screens, we highly recommend the free HardCopy program:

🌐 **http://www.hardcopy.de/hardcopy/english/index.php**

4.7 What are Label Files?
In several different screens such as Measuring Blocks, VCDS tries to elaborate as much as possible what the data means. Unfortunately, the "Data Type" information coming from the Control Module is not that precise. For example: VCDS can tell that a particular field contains a Temperature, but the data from the Controller doesn't tell us whether this is the Coolant Temperature or the Intake Air Temperature.

To reduce the confusion, VCDS supports Label Files and which provide more information about the data being displayed in Measuring Blocks and can also provide additional information for the Coding function and Adaptation Channels. When a Label file for the Control Module you are looking at does not exist, VCDS will base the elaboration on an "educated guess" as to what a particular Data Type means.

For more information about Label Files, see this page:

🌐 **http://www.ross-tech.com/vag-com/labels.html**

4.8 How can I speed up my sample rate in VCDS?
The sample rate at which you can view and log data is largely determined by each controller in the car. There are a few things you can do to speed up the rate for a given controller. First, logging one group at a time, rather than two or three, will help greatly. In order to get the highest sample rate possible go to the Options screen and set Blk Int to 25 and Char Int to 0. Note, however, that this may cause unreliable communications with some controllers. The KP2 Time parameter only applies to controllers using the KWP-2000 protocol. Decreasing it speeds up the sample rate in Measuring Blocks on control modules that use the KWP-2000 protocol. Try setting it to 0. If any of these adjustments cause unreliable communications, change them back closer to the defaults. If in doubt, use the Restore Defaults button! In Engine controllers using KWP-2000, there is a [Turbo] button that can significantly speed up sampling, in some cases to over 30 samples per second. See the Measuring Blocks page for more information.

4.9 What kinds of cool stuff can I do with VCDS?
See our Car Info & Procedures Page where you can look up Vehicle Specific Application Charts for your car to see which control modules exist and can communicate with VCDS. Additionally, there are some very useful links to pages about Key Matching, Immobilizers, as well as some excellent spreadsheets submitted by our customers.

🌐 **http://www.ross-tech.com/vag-com/cars/index.html**

4.10 How do I set up my USB Interface?
To use one of our USB Interfaces, you'll need to download and install the latest version VCDS with USB Support. After you have installed VCDS, you will need to follow the instructions in the Getting Started section of this manual.

VCDS FAQ cont. *Section 33-K*

4.11 Does Ross-Tech make diagnostic software for other makes of cars?
Ross-Tech has plans to introduce a diagnostic package for BMW/MINI and we have put considerable effort into its development. However we've come to realize that before this product can meet the high standards that our customers have come to expect from VCDS, it will require considerably more time and resources than originally planned. Therefore the BMW/Mini product release is not imminent. As this situation changes, we will update this FAQ entry with the relevant information and will post announcements on our News page.

We do not currently have plans to develop manufacturer-specific software for any other makes of cars, but of course, all plans are subject to change. We do not know of any other makers of similar software for other makes of vehicles. VCDS does support Generic OBD-II functionality for ISO/CAN, see the OBD-II Page for more info.

4.12 Can I use VCDS to retrieve my Radio Code to get it out of "SAFE" mode?
No. You'll need to get the radio code from your dealer (it should also be on a card that came with your car). Most likely, the dealer will need to connect their scan tool to your vehicle. Their tool then relays information from the vehicle to the headquarters to retrieve the radio code. VCDS cannot retrieve the radio code for you. In many cases, the radio will be in SAFE mode after disconnecting the battery, but it will automatically exit that mode after a period of time, as long as it is still installed in the same vehicle.

4.13 Does VCDS work with cars that require direct CAN access for diagnostics?
Yes! VCDS supports CAN-Bus diagnostics when used with a CAN-Bus interface. The HEX-COM+CAN and HEX-USB+CAN interfaces (which are included in the Pro-Kit) are fully compatible with the latest cars that require a direct CAN connection as well as being backwards-compatible with the older cars that use k-lines. The Mk5 based vehicles like the Rabbit and Jetta can use a lower priced Micro-CAN as well. Check out our CAN-Bus page for more information:

http://www.ross-tech.com/vag-com/canbus.html

4.14 Can I use VCDS to make my windows roll up and down using my keyfob remote?
Many Audi vehicles and newer VW vehicles can be recoded to allow this function. Most older VW models do not have the same capability. In order to make your windows roll up and down using your remote in an older VW, you'll need to add extra hardware such as the

Remote Window Controller from: **http://www.alientech.net**

**4.15 How do I obtain an SKC for Immobilizer and Key-Matching functions?**
We do not know of any way to retrieve an SKC for VW/Audi/SEAT/Skoda vehicles other than getting it from an official dealership. Prior to 2002, some vehicles were delivered with a scratch-off panel on a plastic tag that contained the 4 digit PIN code. Starting in 2002, dealerships implemented the WIN2 system to provide SKC's to their technicians and customers. Starting April 1, 2005, VW/Audi dealerships switched to the new GEKO system, whereby their factory scan tools dial up the factory while connected to a car. Under this system, the technician no longer sees the SKC at all and you will need to bring your vehicle into the dealer to have Immobilizer work performed. VAG-COM does not interact with the GEKO system. Check out our Immobilizer Page for more information and procedures.

http://www.ross-tech.com/vag-com/cars/immobilizer.html

VC-Scope Graphing 'Plug-In' for VCDS- Section 34-A

VC-Scope is automatically installed when you install VCDS.
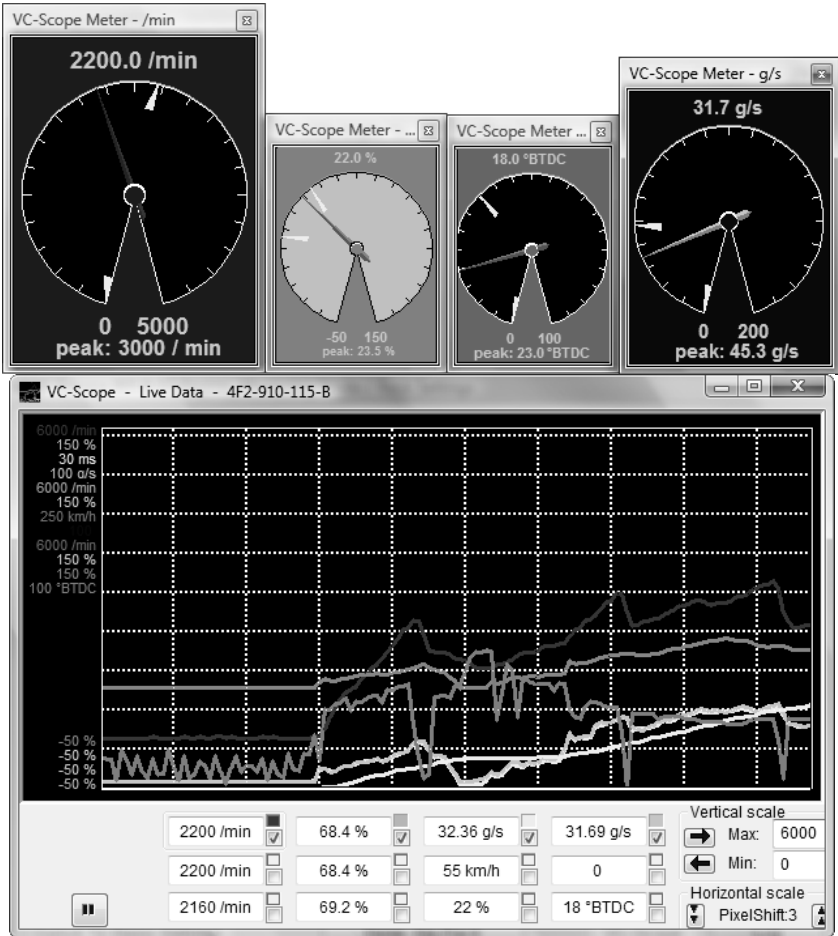
Quick Instructions:

- You can use VC-Scope in one of two ways: Allow VCDS to launch VC-Scope by clicking the **[VC-Scope]** button on the Measuring Blocks screen, or manually start VC-Scope in stand-alone mode to play back VCDS Log Files. You cannot do both at the same time. If VC-Scope is running in Stand-alone mode, VCDS will not start. If you manually start VC-Scope while VCDS is running, it will probably complain.

- Use the checkboxes next to each display field to select which items are graphed.

VC-Scope cont. - Section 34-B

Quick Instructions cont:

- Click on a field to select it for vertical scaling.   VC-Scope will remember all scaling values for a particular control module by part number.

- Click the VC-Scope icon on the top left of the main VC-Scope screen for a menu item to access a Preferences Dialog:

Preferences:

- Here you can set colors for the graph lines, the graph background and the grid.

- You can also set default scaling values (based on the units that VCDS sends)
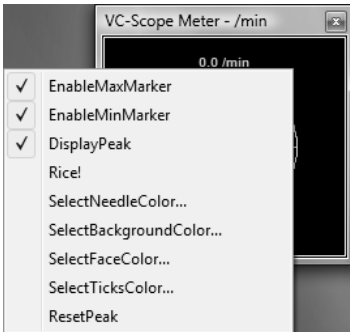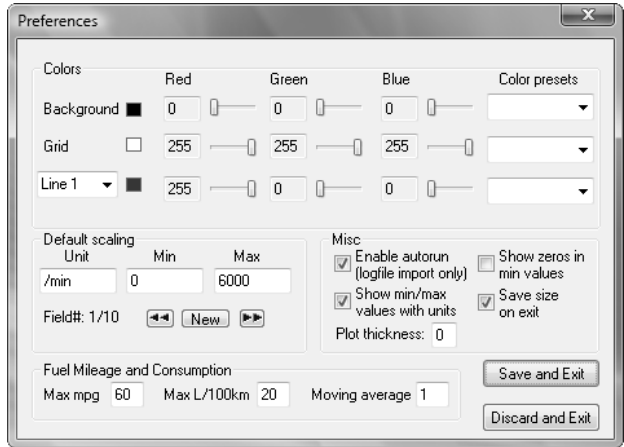
◄Right-clicking on the gauge itself will give you several options:

Right-click on the color box to open up a gauge for that value. ►

NOTE:
VC-Scope can be used to play back Log files but only if they have not been saved or modified by any other program.

VC-Scope -- FAQ:

Q: What are those numbers on the left of the graph?
A: They are the scaling numbers. They define the min and max values that will be graphed in the window. For instance, a temperature could be graphed between -10 and 130*C.

Q: Great, but I don't like the current ones.
A: Don't worry, everything is fully customizable. You have two different ways of choosing your scaling factors:

- In the preferences screen, you can either modify the values for existing units, or add a new unit with its values. Make sure the unit is spelled exactly (including the case) as it appears in the measuring blocks/graphing data.

- In the main screen, click on a field (or use the blue horizontal arrow) to display its scaling values. The field you're working on is surrounded by a frame. You can then change the min and max scaling factors for this particular field

Both settings are saved, so that next time you won't have to do it all over again!

Q: So what's the difference between these two different ways?
A: First, you need to understand how the values are stored/retrieved. When VC-Scope graphs data from a controller it doesn't know, it applies the values in the preferences screen, for the units that are defined. If a unit is "unknown", the min will be 0 and the max will be 100.

Setting the values in the main screen allows you to override these defaults. For instance, let's say you set the rpm (/min) value in the preferences screen at 7000. This is fine for gasoline engines. But a friend visits you with his TDI. What you do is you set the /min fields in the main screen at 4500, to keep a good resolution in your graph.

At that point, as soon as you stop graphing, the values are stored in the "scaling" directory, in a file named by the controller part number. And next time you connect to the same controller, VC-Scope will automatically remember your settings.

Q: What's the deal with the horizontal scaling?
A: This enables you to tell VC-Scope the value of the horizontal shift (in pixels) each time a new sample is delivered by VCDS. This is customizable because of the range of sample rates you can experiment with VCDS: you can go from 30 samples per second on a '02 A4 3.0Q (engine, 1 measuring block at a time) to 0.4 on a Eurovan (transmission, 3 measuring blocks). The default is 3, but you may want to increase it if your sample rate is low to make your graphs will be more readable.

This value is also saved automatically for each control module.

Q: Why do I have a big blank after I hit "pause" in live mode?
A: This is intentional. It shows the graph has been paused and avoids having a big discontinuity in the curves (for instance going from 800 to 7500 rpm in 0.2 second...).

The "pause" button (**II**) can be handy to make screenshots of a particular situation, like a boost spike for example.

VC-Scope – FAQ cont. :

Q: VC-Scope says "unexpected end of values". What's wrong?
A: At this time, VC-Scope does not support appended log files. More precisely, it will only read the first part of them. The solution is to give your files a more specific name than "LOG-001-003-xxx-xxx" :-)

Q: "This is not an original VCDS log file"
A: Guess what, you altered the file in some way. For instance, just reading and saving the file in Excel adds comas to it, and this is what VC-Scope relies on to parse the file. Solution: make a copy of the file before you edit it with a program that modifies the comas.

Q: I'd like to write my own VC-Scope. Is this possible?
A: Yes, that's one of the reasons why VC-Scope is open source (the other being we don't want to be bothered by 10 different feature requests a day). VC-Scope was written using MS Visual C++ 6 and you will find the source code on our website.
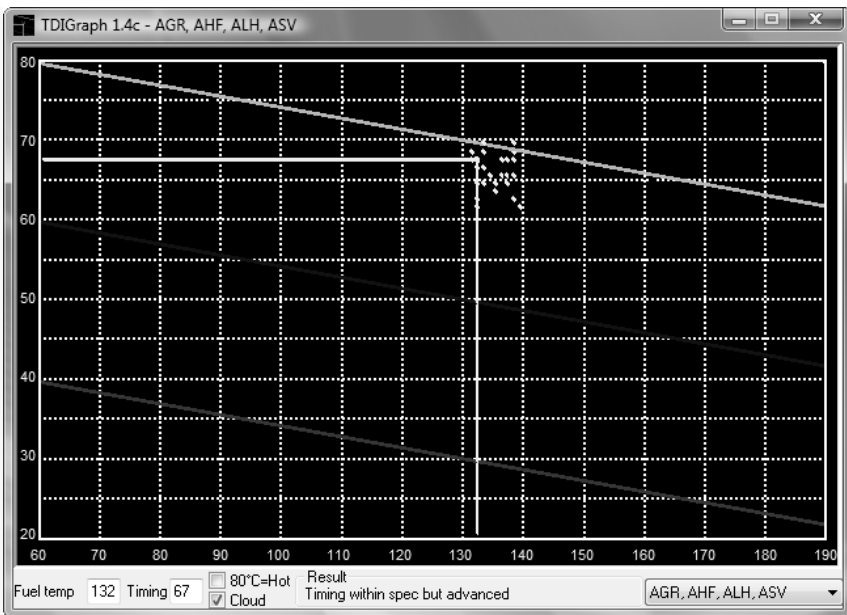
🌐 **www.ross-tech.com/vc-scope/**

Feel free to improve/write your own VC-Scope and publish it. Obviously your file has to be called VC-Scope.exe so that VCDS can "spawn" it.

Q: But I can't program/all I know is VB!
A: Then stop complaining or learn! ;-)

TDI Timing Checker 'Plug-In' for VCDS - Section 35-A

The **TDI Timing Checker** is automatically installed when you install VCDS.

Note: This ONLY applies to VE Engines and DOES NOT apply to PD (unit injectors) or CR (common Rail) engines

This plug-in allows you to check the injection timing setting on a VE TDI engine (NOT PD or CR varieties). This needs to be done after you change the timing belt and should be done every once in a while to keep tabs on belt stretch and pump/pulley misalignment. The standard procedure for this is to have the engine idling at operating temperature (coolant temp >85*C), go to measuring block 000 for the engine, switch to basic settings and report fields #2 (injection timing) and #9 (fuel temperature) on a special graph.

This plug-in reports the timing on the graph in real-time, so you don't need to have your manual sitting on your lap at the same time. The application also gives you a comment in the "result" field, that will tell you if all the conditions are fulfilled to check the timing (some people don't realize you need to have the engine running, for instance...) and if your timing is within spec or not.

The history of the last 100 samples is displayed as a "cloud" of points. From the size and shape of this "cloud" you can see how much "jumping around" your engine is doing, and your average timing is probably right in the middle of the cloud.

Step by step:

- Start your engine

- Start **VCDS**

- Press the **[Select]** button

- Press the **[01-Engine]** button

- Press the **[Meas. blocks-08]** button

- Go to group 000

- Press the **[Switch to basic settings]** button

- Now press the **[TDI Timing]** button.

It is normal for the glowplug light to flash and for the engine sound to change slightly while using this function. This thread may be helpful as well:

http://forums.tdiclub.com/showthread.php?t=163435

The TDI Timing Checker works only as a "plug-in". You must start it using the **[TDI Timing]** button in VCDS. Starting it any other way will result in error messages and it won't work.

Note to 1.9 PD (pumpe duese aka unit injectors) and CR (common rail) owners: The timing in PD and CR engines is determined electronically by the ECU. There is neither a need nor an ability to check timing on the PD or CR engines using VCDS. There are no graphs published for the simple reason that the timing is set using a dedicated VAG locking tool when changing the timing belt :-)

Version history and source code for the TDI Timing Checker can be found on our website:

http://www.ross-tech.com/vag-scope/TDIGraph.html

VCDS Function Chart - Section 36-A

Factory Diagnostic Tools: VAG-1551/1552 or VAS-5051/5052 Function Number / Name	VCDS Release 805
00 Auto-Scan	**Yes**
01 Control Unit Info	**Yes**
02 Read Fault Codes	**Yes**
03 Output Tests	**Yes**
Selective Output Tests	**Yes**
04 Basic Settings	**Yes**
05 Clear Fault Codes	**Yes**
06 Close Controller	**Yes**
07 Code Module	**Yes**
Code Slave Modules	**Yes**
08 Measuring Blocks	**Yes**
09 Single Reading	**Yes**
10 Adaptation	**Yes**
11 **Login** (called Coding II under KWP-2000)	**Yes**
15 View Readiness	**Yes**
16 Security Access	**Yes**
20 Supported Codes	**Yes**
33 Generic OBD-II	**Yes**
Freeze-Frame Data	**Yes**
Dual K-Line Support	**Yes**
7-Digit SKC/PINs (VAS only)	**Yes**
Code Database current through MY 2008 (VAS)	**Yes**
Diagnostics via direct CAN connection (VAS Only & KWP-2000 only)	**Yes**
Transport Mode	**Yes**
Advanced Measuring Blocks	**Yes** (Factory tools cannot do this!)
Data Logging	**Yes** (Factory tools cannot do this!)
High Speed Data Logging	**Yes** (Factory tools cannot do this!)
Real-Time Graphs	**Yes** (Factory tools cannot do this!)
Real-Time Gauges	**Yes** (Factory tools cannot do this!)
Graphic TDI Timing Checker	**Yes** (Factory tools cannot do this!)
Control Module Finder	**Yes** (Factory tools cannot do this!)
(mis)Guided Fault Finding	**No**

rev. 07/24/2008