# Carsoft ®™ Ultimate Home Software


*FOR MERCEDES-, BMW-, SPRINTER- AND MINI VEHICLES*

*ON-BOARD-DIAGNOSTICS*
*FOR MS-WIN ME/2000/XP/VISTA/7 ™ OPERATING SYSTEM*

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# 1. Welcome

**W**elcome to ***Carsoft*** ®™ the first Diagnostic Software for Mercedes- and SPRINTER Vehicles for Microsoft Windows operating systems.

**Y**ou have chosen to invest in an item of modern technology, which you will soon find to be an important workshop tool. To ensure your satisfaction with this product, our ***Carsoft*** ®™ team will bring you updates whenever the technology requires. In these updates, we will provide new functions and new possibilities for Diagnostics. With these updates your ***Carsoft*** ®™ diagnostic software will always be on the forefront of technology.

**T**hrough the worldwide spreading of ***Carsoft*** ®™ we improve our experience and know-how. However, we need you -our partners- to improve ***Carsoft*** ®™ to make your daily work even more efficient. Please feel free to address any criticisms or suggestions for improvements to your supplier.

**W**ith the contact numbers you can obtain advice on software or operating questions as well as receive news of future updates to the software.
We are, however, unable to give advice on repairs to the car itself.

The ***Carsoft*** ®™ soft- and hardware is a tool which is developed to operate for years. ***Carsoft*** ®™ gets continuously updated, in order to provide a competent service for your customer.
The actual software is a basic program which will accompany you for a long time.

We welcome you as a partner on our team!

Dirk Scevenels

***Carsoft*** ®™ team


For **INFO** please contact:

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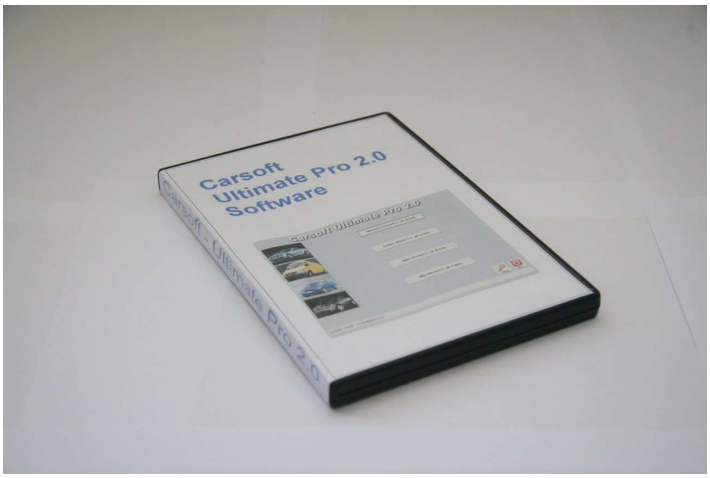
**Fax : +32/19.54.54.30**
**EMAIL : info@carsoftsales.com**

# 2. Carsoft ®™ Ultimate Home hardware specifications




**Carsoft ®™ is developed for use on IBM - compatible computers under Microsoft Windows operating system. The software is NOT compatible with other operating systems**

**Minimum System Requirements:**

- ⇨**Pentium ® III500 MHz**
- ⇨**128 MB RAM**
- ⇨**500 MB Hard Disk Space**
- ⇨**1280x768 Screen Resolutions**
- ⇨**CD-ROM or DVD-ROM Drive**
- ⇨**Serial Port to connect vehicle interface cable**
- ⇨**USB 1.1 or 2.0 Port to connect security dongle**
- ⇨**Microsoft Windows ME-, 2000-, XP-, Vista-, or 7**
- ⇨**A printer is necessary to use the printing functions**

These above specifications can be found in the hardware manuals of the manufacturer of your computer.

# 3. Carsoft ®™ Ultimate Home Installation


IMPORTANT:

DO NOT INSTALL ANY HARDWARE COMPONENTS (USB SECURITY DONGLE OR USB CABLE) UNTIL THE **CARSOFT ®™ SOFTWARE** INSTALLATION HAS BEEN COMPLETED!

Info: If you are using WINDOWS **VISTA**, you must be logged in as **administrator**.

See next page for more info.

# How to make a Vista administrator account

With full administrative access rights (full control)…

*** Windows Vista Business, Enterprise or Ultimate:**

1. Click **Start**, type **secpol.msc** in the **search box**, then press **Enter**
2. From the list on the left, choose **Local Policies**, then **Security Options**
3. Set **Accounts: Administrator account status** to **Enabled**
4. Set **User Account Control: Admin Approval Mode for the Built-in Administrator account** to **Disabled**

*** Windows Vista Home Basic or Home Premium:**

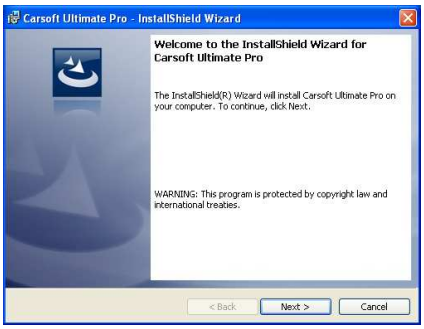
1. Click **Start**, type **cmd** in the **search box**, right click on the program **cmd.exe** and select **Run as Administrator**
2. In the command prompt window, type **net users Administrator /active:yes** then press **Enter**, you should receive a confirmation saying; *The command completed successfully*
3. Click **Start**, type **regedit** in the **search box**, then press **Enter**
4. Navigate to the section: **[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System]**
    - Double click **FilterAdministratorToken** and set it to **0**
5. Next, **logoff** and you will see that a new **Administrator** account will be available. Login to this new Administrator account

**You're now logged in to Windows Vista with full administrative rights. You will not receive any security prompts like before and you should have complete administrative rights to your machine.**

# SOFTWARE INSTALLATION

**- Insert the Carsoft Ultimate Home CD into the CD ROM drive**
**(Do NOT CONNECT the dongle at this moment)**

**- Wait until the Welcome screen appears, and click NEXT**

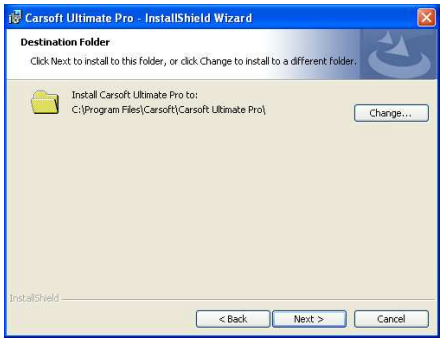



**(If the Auto run feature is not switched on, double click the Setup Icon on the CD)**

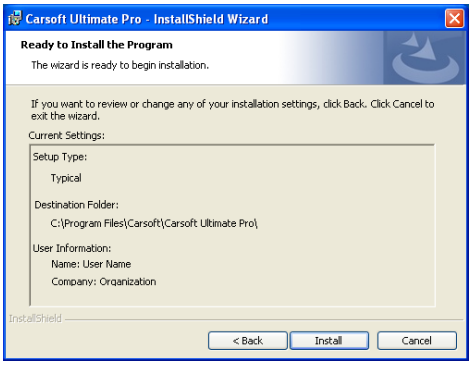
**- Wait until the License Agreement screen appears, then mark "I accept the terms in the license agreement", and click NEXT**


**- Wait until the Customer Information screen appears and verify "**User Name**" and "**Organization**", and click NEXT**

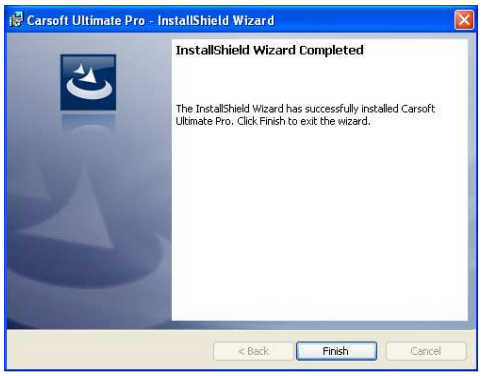

**- Wait until the Destination Folder screen appears, and click NEXT**



**- Wait until the, Ready to Install the Program, screen appears, and click INSTALL**




**- Wait until the Install Shield Wizard Completed screen appears, then click FINISH**




- Start the Carsoft Ultimate Pro application; by double click the Launch Carsoft.exe icon on your desktop.


**- When you start the program for the first time you will be asked to install the Dongle drivers.**

**- Now connect the dongle to the USB port of your computer.**

**After this, the Dongle will be recognized by the windows operating system, and the drivers will be installed automatically. (This can take a few minutes, when it is completed, the windows operating system will inform you that the new dongle can be used)**

# 4. Carsoft ®™ Ultimate Home hardware connection

## A) The serial connector at Carsoft Main Box will be connected with a serial cable to a free serial port from your computer

## B) The connector at the other side from the Main Box will be connected to the vehicle with an adapter cable.

**1) BMW or MB Vehicles equipped with an OBD2 Socket.**
**>>> MAIN box with OBD Adapter.**

**2) BMW Vehicles equipped with 20 PIN Socket.**
**>>> Main box with 20 PIN Adapter**

**3) MB Vehicles equipped with 38 PIN Socket.**
**>>> Main box with 38 PIN Adapter**

# C) Security Dongle Connection


**Security Dongle**

**Free USB Port**

**When you connect the dongle for the first time to a free USB Port the following message will appear:**


**Wait a few seconds, until the next message appears:**


**>>> Now the dongle is ready to be used <<<<**

**Remark:**
**This procedure has to be repeated on all the USB ports where you want to use the dongle on.**

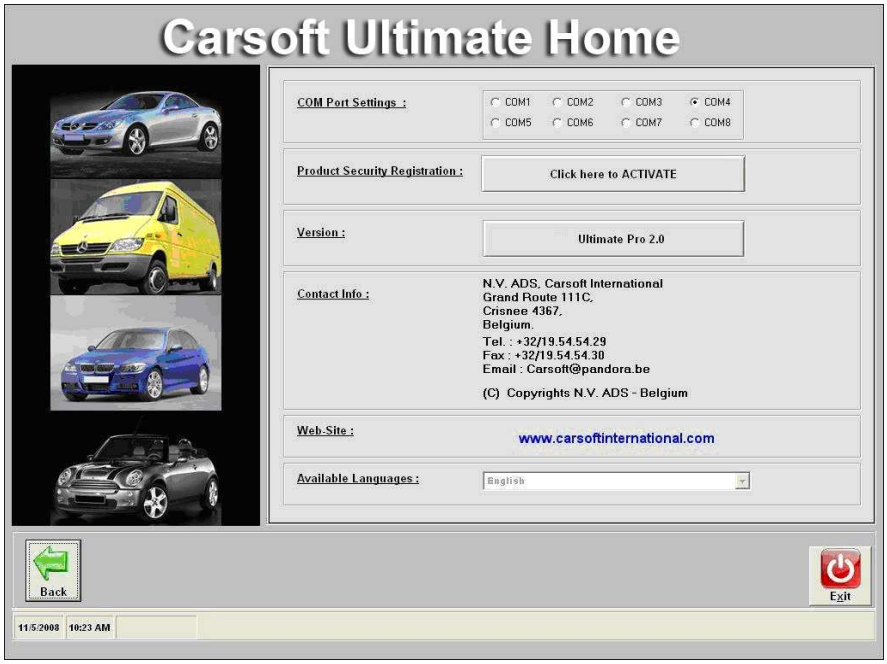
# 5. Carsoft ®™ Ultimate Home software setup

## COM Port Setup

Click the **'Launch Carsoft'** icon to start te software


Click the **'Setup'** button at the left bottom.


Select the appropriate COM port number (See page 13 and 14 for more info)



# INFO : COM Port Number Verification

**Checking Serial COM Port Number.**

This is a guide detailing how to check the settings of the Serial COM Port.

(Although the images are taken from a Windows '98, the procedure is nearly identical under Windows 2000, Windows ME and Windows XP as well.)

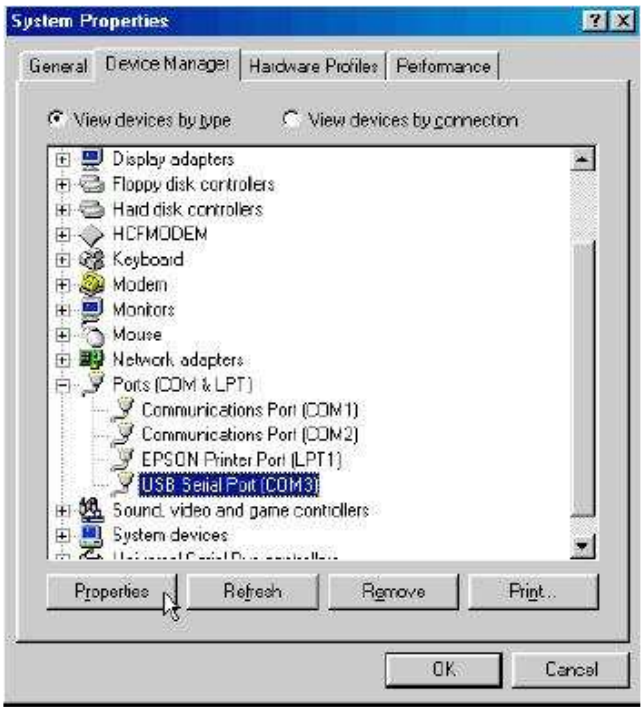
From the Windows **"Start"** button, select **Settings- Control Panel** to bring up the Windows Control Panel.


From the Windows Control Panel select and click on the **"System"** icon.
The following System Properties screen should be displayed on the PC …

Select the **"Device Manager"** tab, and use the "View devices by type" option.
Scroll down the page until Ports (COM & LPT) is shown then click on the "+" symbol to show the entries in this category.

Look for an entry **"Serial Port"** with a COM Port number following it, click on it to select it, then click on the "Properties" button at the page to see more details of the device. In the illustration below the Virtual **COM Port is set to COM3** – this may be different depending on which devices have been installed prior to plugging in the serial device.

The General page of the properties screen shows a few details about the device and confirms that the device is working properly (as far as Windows is concerned).



# 6. Carsoft ®™ Ultimate Home Mercedes Benz Start

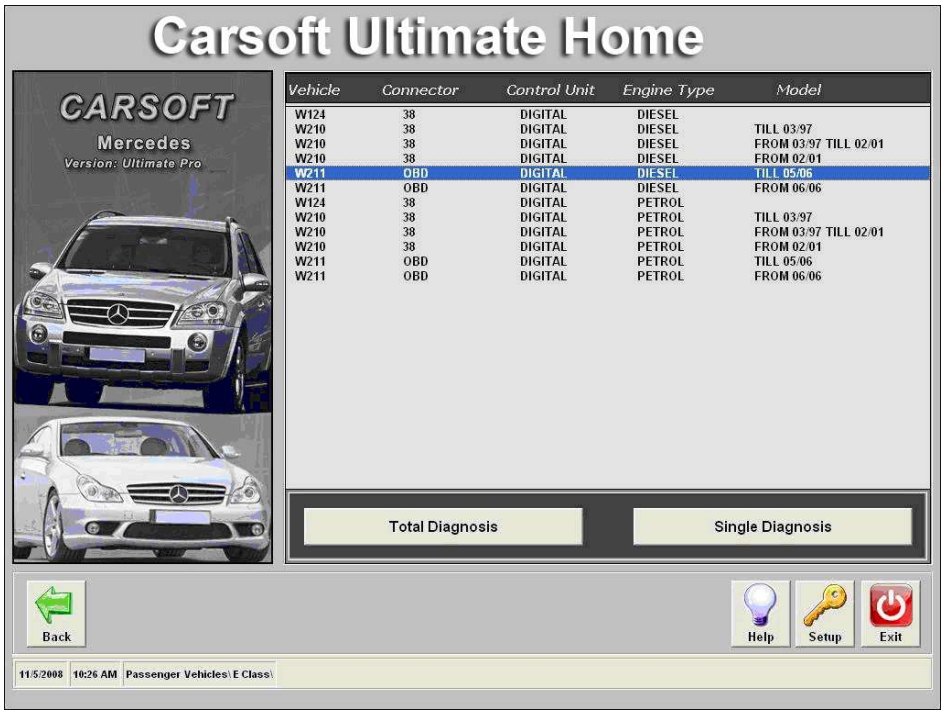
Click the **'Launch Carsoft'** Icon to start the software.


Click the **'Mercedes Ultimate'** button to start the 'Mercedes Benz' software.


Here you make the selection between **'Passenger Vehicles'** and **'Off Road Vehicles'**

After this you have to select the car type. (For Example **E Class**)


After the car type selection you select the car model (For Example **W210 Diesel**)




**Now you can make a selection between:**

**A: Total Diagnosis: Click 'Total Diagnosis'**

**B: Single Diagnosis: Click 'Single Diagnosis'**

# A: Total Diagnosis:

**The ´Total Diagnosis´ makes a quick overview from the control units actually build in into the car. It gives also an overview of the status from each control unit.**

**To start the Total Diagnosis: Click the ´START´ button.**


**Possibility 1 : Status : OK**


**No actual or stored errors stored in the control unit.**

**Possibility 2: Status: Read the error memory!**


**Errors stored in the error memory.**
**The error memory can be read by performing a single diagnosis from the control unit.**
**To go to the single diagnosis, click the button at to the left-hand side.**

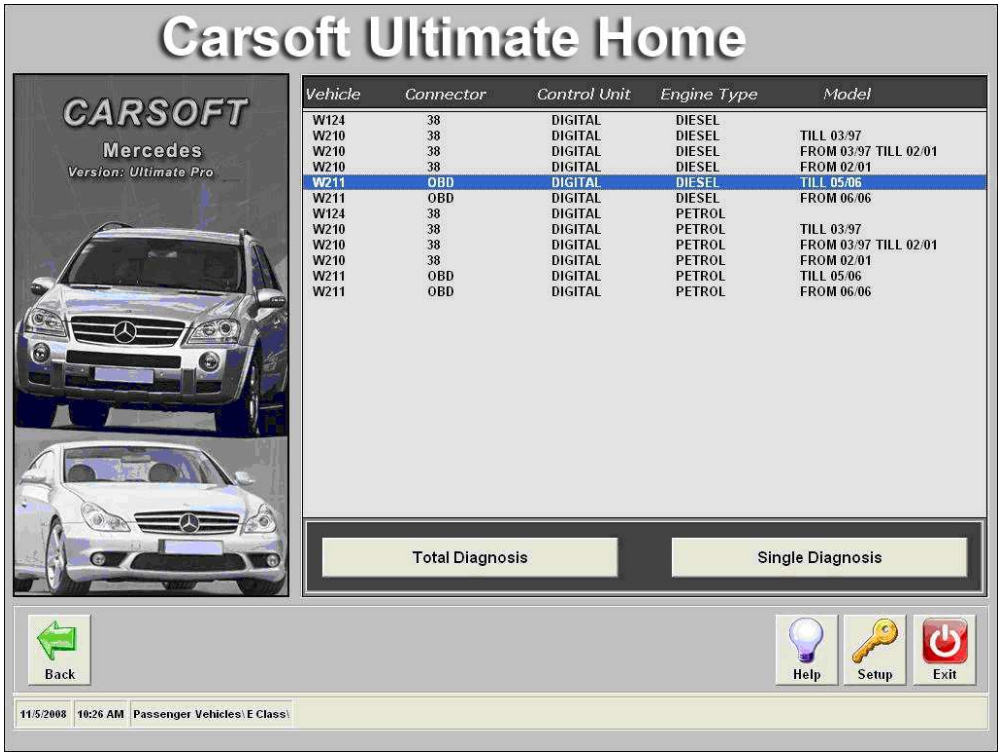
**Possibility 3: Status: Module does not respond**


**Verify if the control unit is build in into the car. Otherwise verify the cable connection to the computer and to the car. Also verify the battery voltage of the car.**

# B: Single Diagnosis:

**The ´Single Diagnosis´ gives you detailed information about the control units and the status of the control unit.**

**To go to ´Single Diagnosis´: Click the ´Single Diagnosis´ button.**

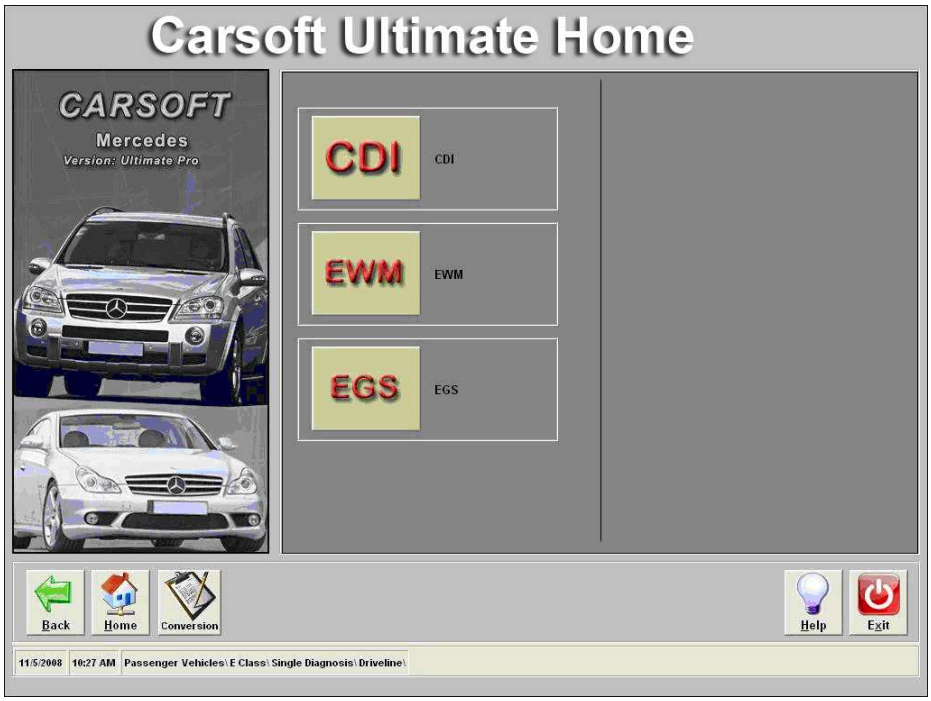



**The control units are divided in the following menus:**

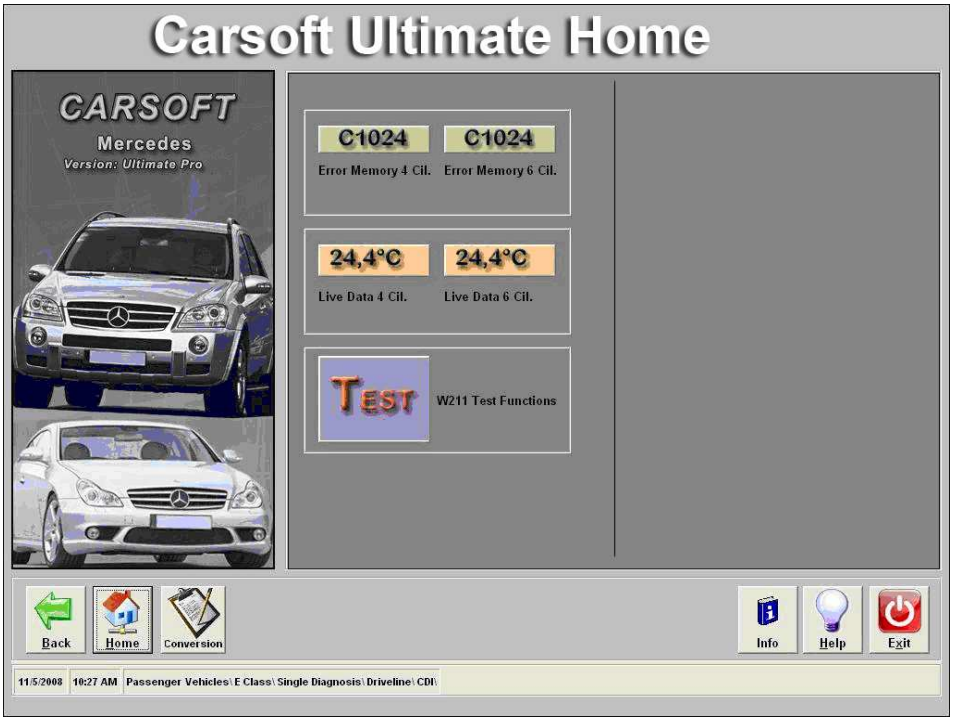
1. ► **Driveline**
2. ► **Chassis Systems**
3. ► **Body**
4. ► **Information and Communications**
5. ► **Air-conditioning**

**In these menus, depending to the selected car, car-type and control unit, multiple functions are possible:**

Example **‘Drive Line’**

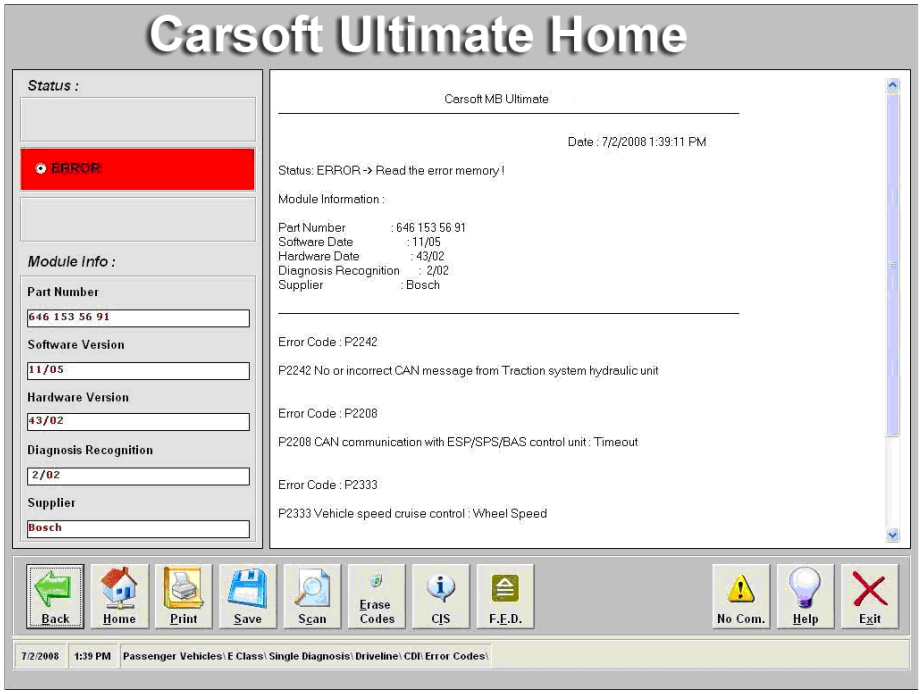



Example **‘CDI Control Unit’**



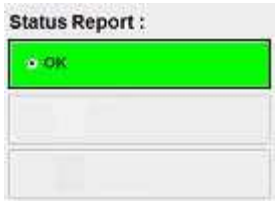

1. ► **Read/Erase Fault Codes**
2. ► **Live Data**
3. ► **Component**
4. ► **Component Tests**
5. ► **Component Activations**
6. ► **Control Unit Coding**
7. ► **Component Coding**
8. ► **Adaptation Functions**
9. ► **Etc. …**

# Single Diagnosis Test Results:




**Tip: All control units have stored errors. Some control units have actual errors.**

## Possibility 1 ► Status: OK

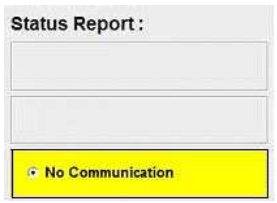



**No actual or stored errors stored in the specific control unit.**

## Possibility 2 ► Status: Error

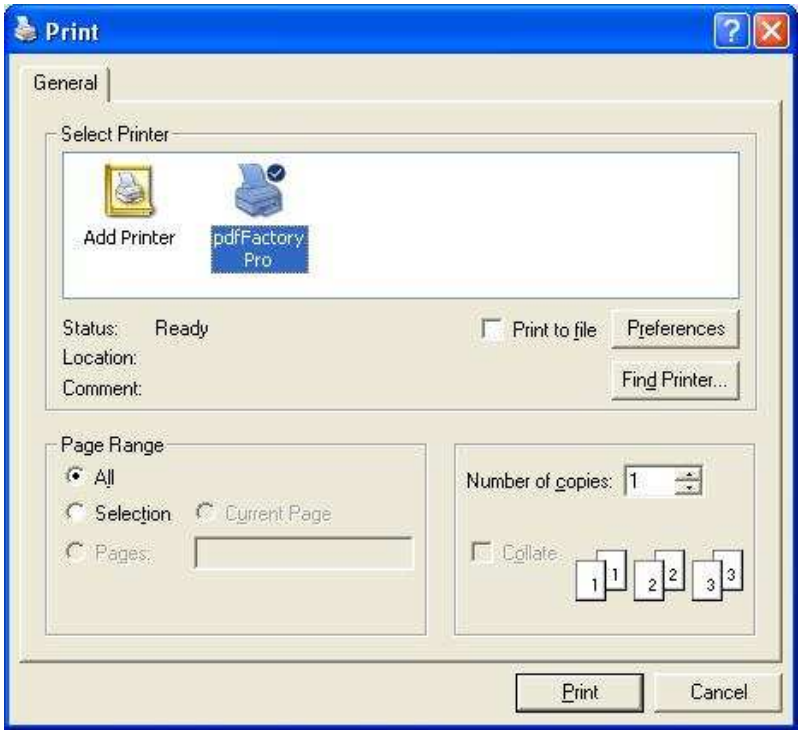

**Errors stored in the error memory.**

## Possibility 3 ► Status: No Communication

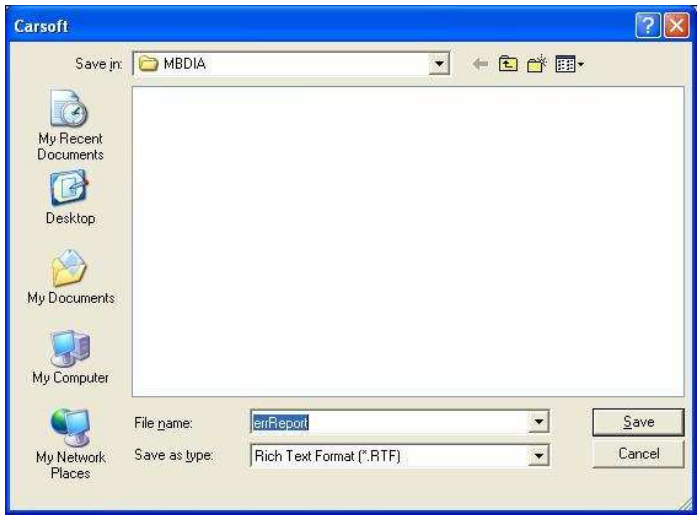



**Verify if the specific control unit is build in into the car. Otherwise verify the cable connection to the computer and to the car. Also verify the battery power of the vehicle.**

► **Click the PRINT button here, you have the opportunity to print the diagnosis result.**




► **Click the SAVE button here, you have the opportunity to save the diagnosis result.**



► **Click the 'CIS' button to start the Carsoft information system.**


**In order to continue you have first have to make the vehicle selection:**

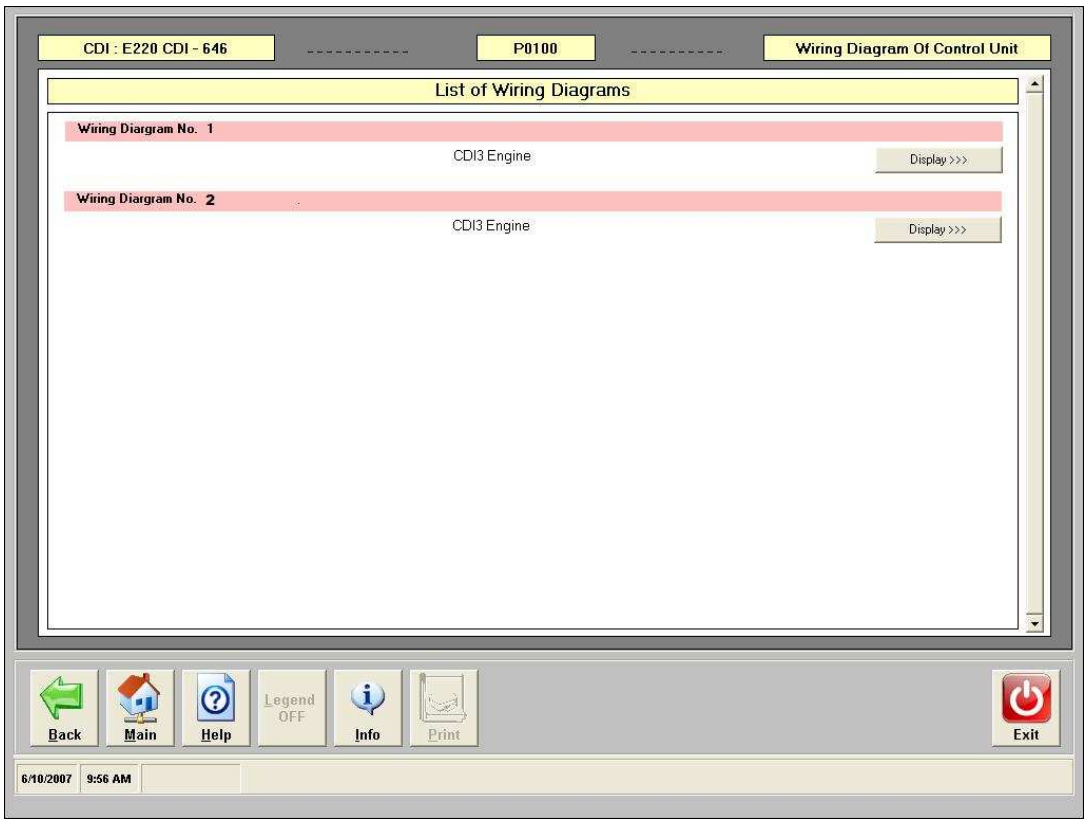
> Step 1: Select the Car (Vehicle Type)
(Models are listed in numerical order)
> Step 2: Select The Engine No.
> Step 3: Select The Error code
(If there are multiple error codes, each one can be selected, but they must be selected on at a time.)

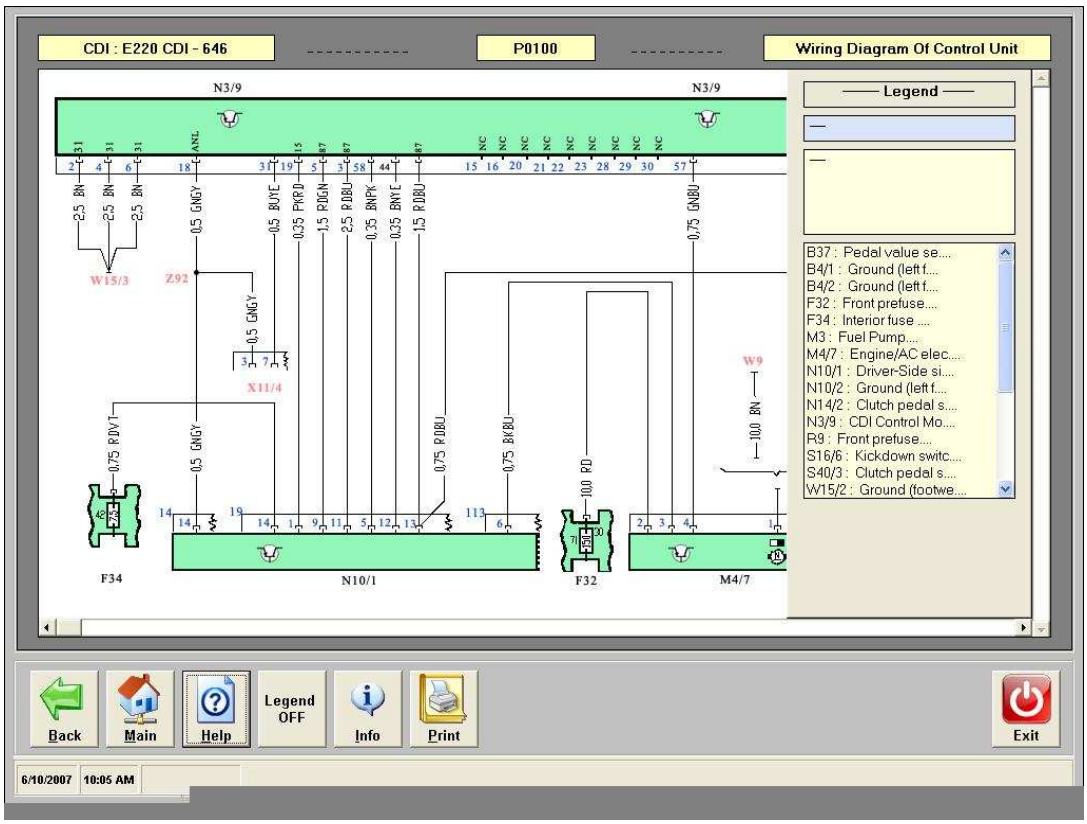
After the selection the CIS buttons will be enabled.
(Wiring Diagram/Component Information/Error Code Explanation)

# 1) Wiring Diagram

Depending to the vehicle and system selected, several choices may be available.

For some systems, due to the complexity, there may be two or more diagrams available.

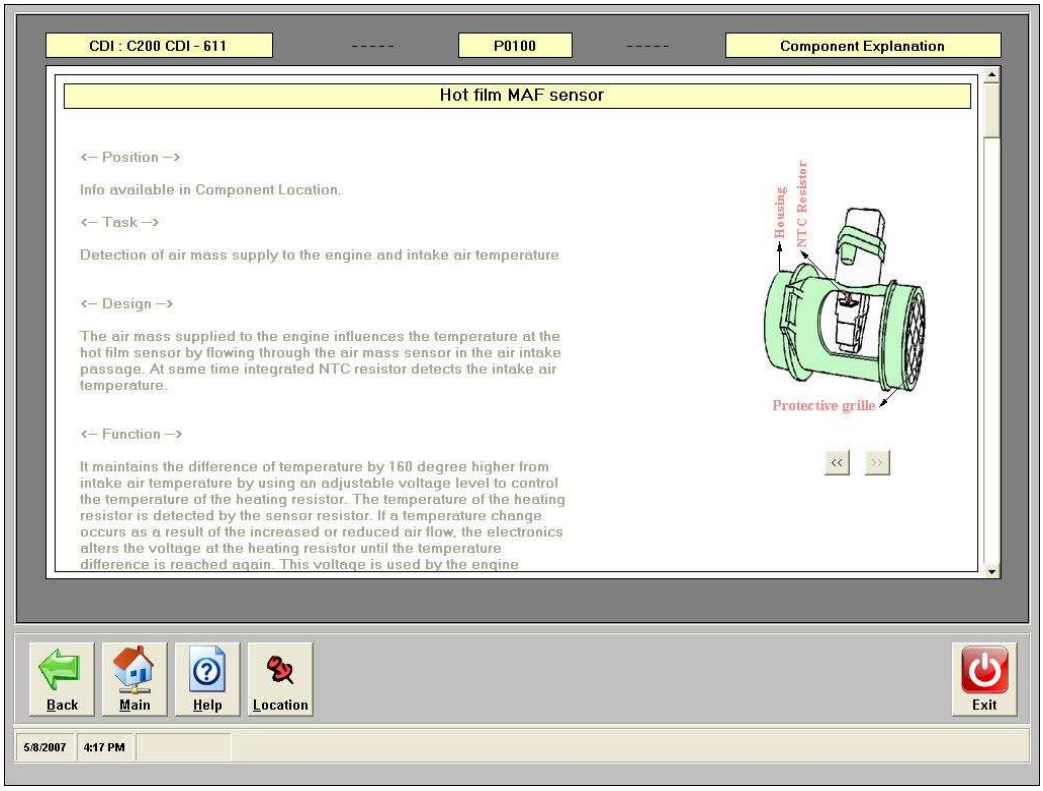


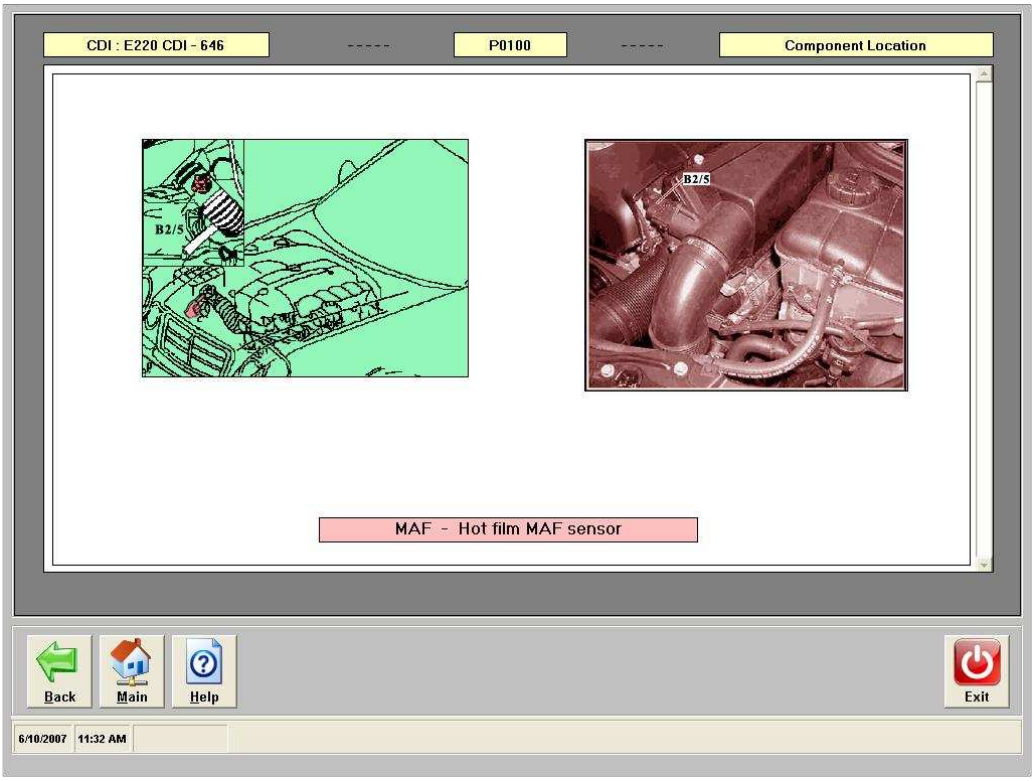
# 2) Component Information

The component information info provides the following information on a component:

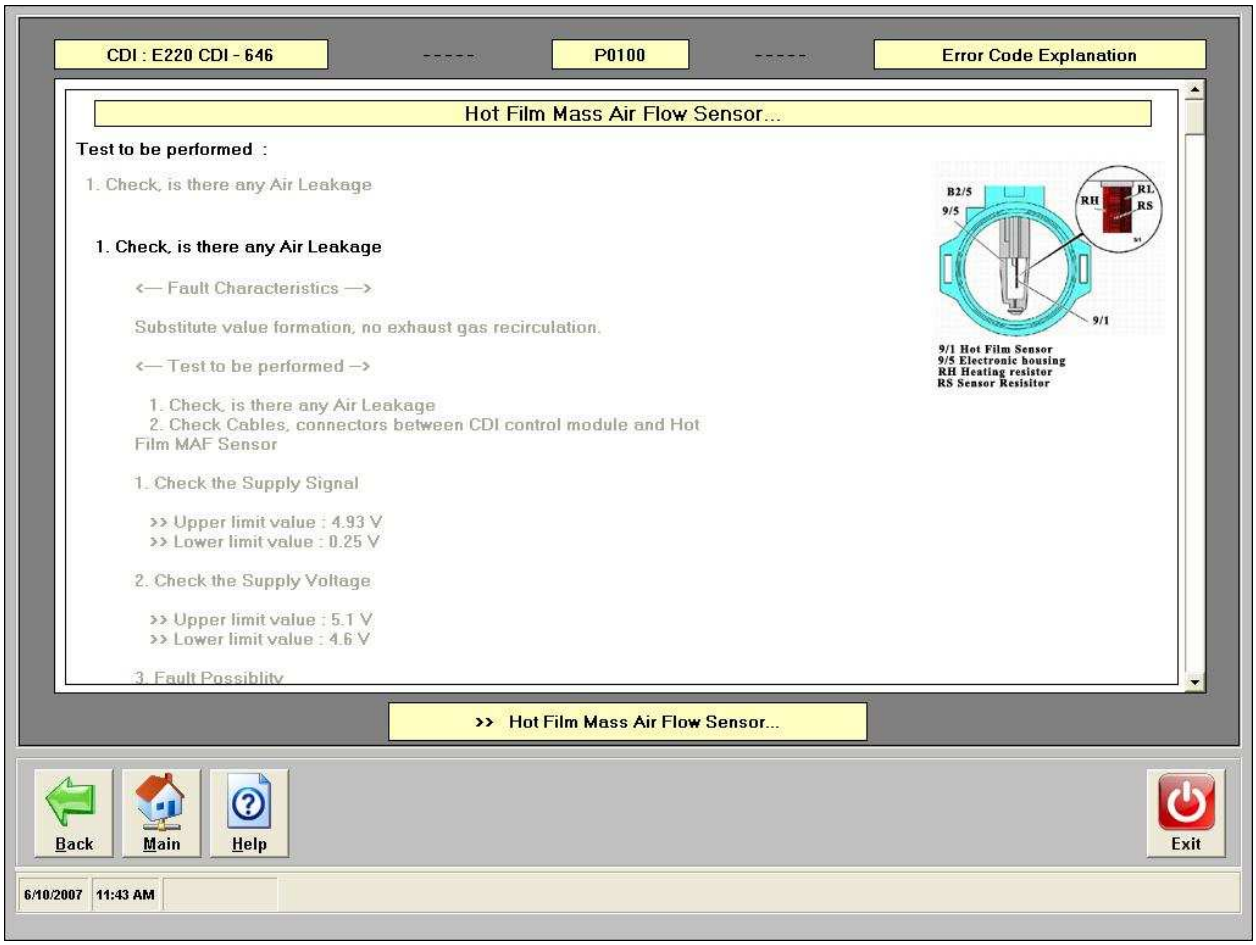
- Position
- Task
- Function / Design




If you click on the **'Location'** button the component location page will be opened.



# 3) Error Code Explanation




Types of information on the error code explanation page:

- Error Code
- Explanation of when fault occurs (Failure mode, Conditions, Etc. …)
- Test Programs
- Test values and parameters
- Test Procedure
- Pictures or diagrams may also be available depending on error codes.

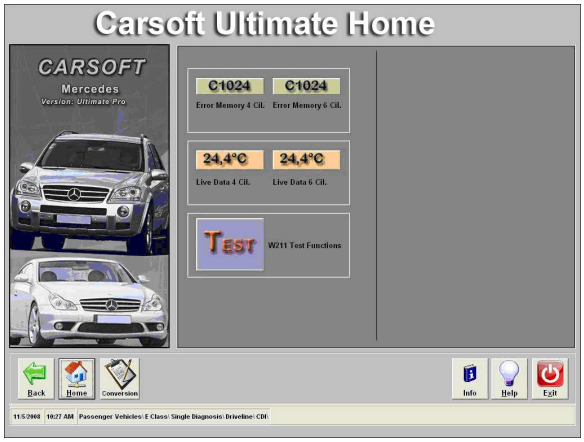
# Special Functions.

Click the **'Exit'** button to exit the CIS part.


Click the **'Back'** button to return to the CDI page.


Here you can enter the available functions for the selected control unit, can be entered by clicking them. >>> Example: **'Live Data'**

Click the **‘Back’** button to return to the CDI page.




Here you can enter the available functions for the selected control unit, can be entered by clicking them. >>> Example **‘Tests’**


Here you can select the required test.

# Used Buttons


**Back ► To return to the previous screen**


**Main ► To return to the Main Menu**


**Start ► To start the total diagnosis**


**Help ► Help file**


**Scan ► To start scanning the error memory**


**Erase Codes ► To erase the error codes**


**No Com. ► No Communication with the vehicle**


**Save ► To save the data to disk**


**Print ► To print the data on paper**


**Exit ► To exit the program**


**Manual ► To open the manual**

# Used Abbreviations

4MATIC - Automatically controlled four-wheel drive
AAC(KLA) - Automatic air conditioning
AB - Airbag
AB - Airbag Control Unit
ABC - Active body control
ABS - ABS Control Unit
ABS - Antilock brake system
ACS(KLS) - Air conditioning seat
ACSR(AKSE) - Automatic child seat recognition
ADM(ASA) - Automatic dimming mirror
ADS - Adaptive damping system
AGW - Audio Gateway Control Unit
AHV - Trailer hitch
AIRCO - Air conditioning Control Unit
AIRMatic - Airmatic System Control Unit
AKR - Semi Automatic Gear Box Control Unit W168
ALR(AFE) - Automatic child seat recognition
APS - Auto pilot system
ARMIN - Airbag with integrated emergency call system
AS(ATS) - Antenna systems
ASD - Automatic locking differential
ASR - Acceleration slip regulation
AT(AG) - Automatic transmission
ATA(EDW) - Anti-theft alarm
BA(RFH) - Backup assist
BAS - BAS Control Unit
BAS - Brake assist
BCAPC(ALDA) - Barometric pressure/charge air pressure compensation
BDC(UT) - Bottom dead center
BM(GM) - Base module
CA(SHI) - Closing assist
CAAC - Convenience automatic air conditioning
CAN - Controller Area Network (databus)
CC(TPM) - Cruise control
CCM(SKF) - Multifunction control module
CDC(CDW) - CD changer
CDI - Common Rail Diesel Engine Control Unit
CDI - Common Rail Diesel Injection (CDI)
CF(KFB) - Convenience feature
CIS - Carsoft Information System
CL(ZV) - Central locking
CNS - Communication and navigation system
COMAND - Cockpit Management and Data System
Command - Command
CRA(KW) - Crank angle
CST(CV) - Cabriolet soft top
CTEL(TEL) - Cellular telephone
CTU(ZAE) - Central triggering unit(airbag)
D2B - D2 bzs
DAS(FBS) - Drive authorization system
DBE - Overhead Control Panel Control Unit
DCM(TSG) - Door control module
DFI(EVE) - Diesel injection system (electronic distributor fuel injection)
DMNL(DH) - Diagnosis Manual
DSV(ASF) - Drive authorization system shut-off valve
DTR - Distronic
DTR - Distronic(distance cruise control)
DWR(AWR) - Distance warning radar
EA(EFP) - Electronic accelerator
EAS(EVL) - Electrically adjustable steering column

EBR(MSR) - Engine braking regulation
E-Call - Emergency call system
ECI - Electronic controlled ignition
EDC - Electronic diesel control

EDR - Electronic diesel regulation
EDS - Electronic diesel system
EDW - Anti Theft Alarm Control Unit
EGR(ARF) - Exhaust gas recirculation
EGS - Electronic Gearbox Control Unit
EHD - Electronic high pressure diesel injection system
EIS(EZS) - Electronic ignition switch control module
EL(ABL) - Exterior lights
ELC(ENR) - Electronic level control
EPC - Electronic power control
ERE - Diesel Engine Control Unit
ESA(ESV) - Electric seat adjustment
ESCM(MAS) - Engine systems control module
ESM - Electronic selector lever module
ESP - Electronic stability program
ESP - ESP Control Unit
ESVVL - Electronic Seat Adjustment Control Unit
ESVVR - Electronic Seat Adjustment Control Unit
ETC(EGS) - Electronic transmission control
ETR(GUS) - Emergency tensioning retractor
ETS - Electronic traction system
EVE - Diesel Engine Control Unit
EWM - Electronic slever Control Unit
EZS - Electronic Ignition System
FAN - Fanfare horns system
FBS - Drive Authorization Signal Control Unit
FFS(RBA) - Frame-floor system
FG - Function subgroup
GPS - Global positioning system
HB(ZH) - Heater booster
HCS(SRA) - Headlamp cleaning system
HEAT(HAU) - Automatic heater
HFM - Petrol Engine Control Unit
HFM-SFI - Fuel injection and ignition system hot film engine management
HFS(FSA) - Hands-free system
HHT - Hand-held Tester
HRA(LWR) - Headlamp range adjustment
HRS(SIF) - Heated rear seats
HS(SIH) - Heated seats
IC(KI) - Instrument cluster
ICS - Information and communication system
IFI(ERE) - Diesel injection system(electronic inline fuel system)
IMM(WFS) - Immobilizer
IR - Infrared
ISC(ELR) - Electronic idle speed control
ISC(LLR) - Idle speed control
KI - Instrument Cluster Control Unit
KSS(AKR) - Knock sensor system
LCP(UBF) - Lower control panel
LHS(LL) - Left hand steering
LH-SFI - LH-SFI fuel injection and ignition system
LOC(NV) - Low compression
LR(LDH) - Lamella roof
LS(LSA) - Loudspeaker system
LWR - Headlight Range Adjustment Control Unit
MCS(MKS) - Multicontour seat
ME - Petrol Engine Control Unit
ME-SFI - ME-SFI fuel injection and ignition system
MKL - Multicontour backrest

MRA - Residual engine heat utilization
MRS - Multifunction restraint system
MS(IRS) - Interior motion sensor
MSC(ESL) - Mirror, steering column adjustment, heated mirrors
MT(MG) - Manual transmission
MVA(SRU) - Manifold vacuum assist
OBD - On-board diagnosis
OBF - Upper Control Panel Control Unit
OCP - Overhead control panel control module
OMS - Operating monitoring system
OSB(OSL) - Orthopaedic seat backrest
PE - Plan Electrics
PEC(PMS) - Fuel injection and ignition system(Pressurized engine control)
PISE(PLA) - Pneumatic idle speed increase
PL(SVS) - Power locking
PMP(PSV) - Partial intake manifold preheater
PMS - Petrol Engine Control Unit
PROX(ABW) - Distance Warner
PS(LS) - Power steering
PSE - Pneumatic Control Unit
PSE - Pneumatic system equipment
PTS - Parktronic system
PTS - Parktronic System Control Unit
PW(EFH) - Power windows
RAS(HAL) - Rear axle steering
RB(URB) - Roll bar
RB(URB) - Roll bar crash deployment
RCL(IFZ) - Remote central locking
RD - Radio
RDS - Radio data system
RFL(FFZ) - Radio frequency locking/electric central locking
RFL/RCL(FFZ/IFZ) - Radio frequency/remote central locking
RHR(KAF) - Retractable rear head restraints
RHS(RL) - Right hand steering
RST(RV) - Roadster soft top
RTC(HDFS) - Remote trunk lid closing
RTG(VHG) - Retractable trunk lid grip
RTR(HDF) - Remote trunk release
RUF - Catalytic converter retrofit version
RWD(HHS) - Rear window defroster
SA - Special equipment
SAM - Signal acquisition and actuation module
SAM - Signal Acquisition Module Control Unit
SAMH - Rear Signal Acquisition Module Control Unit
SAMV - Front Signal Acquisition Module Control Unit
SAMVL - Front Left Signal Acquisition Module Control
SAMVR - Front Right Signal Acquisition Module Control
SBC - Sensitive Brake Control Unit
SBC - Sensotronic Brake Control
SBE(GUB) - Seat belt extender
SBL - Seat ventilation
SCM - Steering column module
SEQ - Sequential automated manual transmission
SEQ(KSG) - Sequentronic manual transmission
SIH - Heated Seats Control Unit
SMS(RA) - Service microfiche system
SPS(PML) - Speed-sensitive power steering
SR(SHD) - Tilting/sliding roof
SRS - Supplemental restraint system
SSG - Sprintshift Control Unit
STH - Stationary heater
SVMCM(MSS) - Special vehicle multifunction control module
TAC(TAU) - Tempmatic air conditioning
TAL(HZS) - Trunk lid auxiliary lock

TC(TURBO) - Turbocharger
TD - Speed signal (time division) DI(EZL)
TDC(OT) - Top dead center
TELE AID - Telematic alarm identification on demand(emergency call system)
TN - Speed signal (EZL/AKR)
TPC(RDK) - Tire pressure control
TPM(RDU) - Tire pressure monitoring
TRIP(RRE) - Trip computer
TS(AS) - Towing sensor
TSG - Door Control Unit
TSGHL - Rear Left Door Control Unit
TSGHR - Rear Right Door Control Unit
TSGVL - Front Left Door Control Unit
TSGVR - Front Right Door Control Unit
TV - TV Tuner
TWC(KAT) - Three-way catalytic converter
UBF - Lower Control Panel Control Unit
UHI - Telephone
UPC - Upper control panel
UVS - Roadster Roof Control Unit
UVS(RVC) - Roll bar soft top control
VCS(SBS) - Voice control system
VD - Vario Roof Control Unit
VR(VD) - Vario roof
VSS(GES) - Vehicle speed signal
ZAS - Cylinder shut-off
ZGW - Central Gateway Control Unit
(+) - Positive
(-) - Negative
15 - Switched ground behind battery, ignition / starter switch output
15 DIA - Switched positive, diagnosis
15 UG - Switched positive, infused
15g - Switched positive, fused
15R - Switched positive, in ignition position l' 2 and 3
15X - Switched positive, in ignition position 2
30 - Battery, input from battery positive, direct
30Z - U battery circuit 30Z, infused
31 - Return circuit to battery negative or ground, direct
31b - Return circuit to battery negative or ground through switch or relay, switched negative
49 - Turn signal pulse generator input
49a - Turn signal' pulse generator output
49aL - Left turn signal pulse generator output
49aR - Right turn signal pulse generator output
50 - Starter control (direct)
53 - Wiper motor, input (+)
53b - Wiper (shunt)
54 - Stop lamp
56 - Headlamp beam
56a - Main beam and main beam indicator
56b - Low beam
58 - Limit, tail, license plate and instrument lamps
58L - Left clerance, tail licence plate and instrument lights
58R - Right clerance, tail licence plate and instrument lights
58d - Variable instrument / switch lighting
61 - Generator indicator
85 - Switching relay, winding end negative or ground
86 - Switching relay, winding start
87 - Relay contact for NC contact and changeover contact, input
87a - Relay contact for NC contact and changeover contact, first output (NC side)
87b - Relay contact for NC contact and changeover contact, second output
87ABS - Traction systems relay contact input
87F - Fanfare horns relay contact input
87KP - Fuel pump assembly relay contact input
87LP - Air pump relay contact input

87M1 - Circuit 87M1 fused
87M2 - Circuit 87M2 fused
A88F+ - Passenger airbag+
A88F- - Passenger airbag-
A8FA+ - Driver airbag+
A8FA- - Driver airbag-
ABBF- - Front passenger airbag -
ABBF+ - Front passenger airbag +
ABFA- - Driver airbag -
ABFA+ - Driver airbag +
AKSE - Automatic child seat recognition
Anten. - Antenna
ASR-OFF - ASR-OFF switch
AP - Output proportional
AP EV1 - Output proportional injector 1
AP EV2 - Output proportional injector 2
AP EV3 - Output proportional injector 3
AP EV3 - Output proportional injector 4
AP MO+ - Output proportional motor+
AP MO- - Output proportional motor-AP
AP NWS - Output proportional camshaft sensor
AP ULK+ - Output potentiometer recalculated air flap+
AP ULK- - Output potentiometer recalculated air flap-
AS - Output shift
AS LSHK - O2 sensor heater, downstream TWC
AS SLV - Ouptput shift air pump switchover valve
ASR OFF - ASR OFF switch
Ay- - Lateral acceleration-
Ay+ - Lateral acceleration+
B33 On - ATA ON tilt sensor
B33 Off - ATA OFF tilt sensor
B33 Alarm - ATA ALARM tilt sensor
B+ - Battery positive
B- - Battery negative
BBWL - Brake pad wear, front left
BBWR - Brake pad wear, front right
BF - Front passenger
BL - Stop Lamp
BLA - Stop light shutoff
BS - Stop lamp switch
CAN BUS(H) - CAN (high)
CAN BUS(L) - CAN (low)
CAN IH - CAN interior bus (high)
CAN IL - CAN interior bus (low)
CDW 30 - CD changer circuit 30
CDW 31 - CD changer circuit 31
CDW - CD changer control
Crash Sig. - Crash Signal
Crash-A - Crash Signal output
D+ - Dynamo, positive
D- - Dynamo, negative
D28 IN - D2-BUS, input
D28 OUT - D2-BUS, output
DF - Dynamo field
DF ST A - Speed frequency control module output
DFVL - Speed sensor front left
DFA-VL - Speed sensor output front left
DFHA - Speed sensor rear axle
DFHL - Speed sensor rear left axle
DFHR - Speed sensor rear right axle
DFVL - Speed sensor front left axle
DFVR - Speed sensor front right axle
DG - Pressure sensor
DIA - Diagnosis

DRS - Yaw rate sensor
EA - Input analogue
EF - Input frequency
E-AUS – Input signal -off
E-KSK - Input-shift signal -shift contact control
E-S+B - Input-shift signal -set / accelerate
E-S-B - Input-shift signal -set / accelerate (decelerate)
E-WA - Input-shift signal -resume
F - Fanfare horns
FA - Driver
FSA+ - Hands free system+
FSA- - Hands free system-
GAL - Speed-depended volume control
GND - Ground
GS - Emergency tensioning retractor
GS8FA+ - Passenger emergency tensioning retractor, positive
GS8FA- - Passenger emergency tensioning retractor, negative
GSFA+ - Driver emergency tensioning retractor, positive
GSFA- - Driver emergency tensioning retractor, negative
(H) - High
HAS - Hand brake, signal
HHS - Rear window defroster
HL AV - Rear left solenoid valve pressure reduction
HL EV - Rear left solenoid valve pressure holding
HR AV - Rear right solenoid valve pressure reduction
HR EV - Rear right solenoid valve pressure holding
Ke - License plate lamp
KP - Fuel pump group
(L) - Low
LP - Air pump
L/R - Left/right
LS - Release switch
LWS - Steering angle sensor
M1 - Ground 1
M2 - Ground 2
MBBVVL - Ground, left front brake pad wear
MBBVVR - Ground, right front brake pad wear
MDFHL - Ground, left rear speed sensor
MDFHR - Ground, right rear speed sensor
MDFVL - Ground, left front speed sensor
MDFVR - Ground, right front speed sensor
Mikr.+ - Microphone positive
Mikr.- - Microphone negative
ML - Ground (power ground°
MMV - Solenoid valve
MRA - Engine relay actuation
MRU - Engine relay voltage
MUTE - Muting
MV+ - Solenoid valve positive
N.C. - Not connected
Ne - Fog lamp
NSL - Rear fog lamp
Not Used - Not connected
P - Parking lamp
R1-LED - LED display, rear window defroster switch
R1S - Control signal, rear window defroster switch
Rue. - Backup lamp
S1 - Brake assist release switch, switch position 1
S2 - Brake assist release switch, switch position 2
SB - Accelerate (cruise control)
SBS - Side airbag sensor
Sig. Diag. - Diagnose Signal
SN1 - Lock switch 1
SN2 - Lock switch 2

SP1M - Specified value potentiometer 1 ground
SP1S - Specified value potentiometer 1 signal
SP2M - Specified value potentiometer 2 ground
SP2S - Specified value potentiometer 2 signal
STATUS - Speed sensor output, status
SV - Decelerate (cruise control)
TK - Door contact
UB - Voltage, operation
UG - Unfused
UMRFP - Return flow pump monitor
USP1 - Voltage supply specified value potentiometer 1
USP2 - Voltage supply specified value potentiometer 2
USV - Switchover solenoid valve
VL AV - Front left solenoid valve pressure reduction
VL EV - Front left solenoid valve pressure holding
VR AV - Front right solenoid valve pressure reduction
VR EV - Front right solenoid valve pressure holding
W/S - Program selection (winter/summer)
W0 - Selector lever position code O
W1 - Selector lever position code 1
W2 - Selector lever position code 2
W3 - Selector lever position code 3

# 7. Carsoft ®™ Ultimate Home Sprinter Start

Click the **'Launch Carsoft'** Icon to start the software.


Click the **'Sprinter Ultimate'** button to start the 'Sprinter software.


Then you have to make a selection between **'Diesel'** and **'Petrol'**



**Now you can make a selection between:**

**A: Total Diagnosis : Click 'Total Diagnosis'**

**B: Single Diagnosis : Click 'Single Diagnosis'**

# A: Total Diagnosis:

**The ´Total Diagnosis´ makes a quick overview from the control units actually build in into the car. It gives also an overview of the status from each control unit.**

**To start the Total Diagnosis: Click the ´Start´ button.**


**Possibility 1: Status : OK**


**No actual or stored errors stored in the control unit.**

**Possibility 2: Status: Read the error memory!**


**Errors stored in the error memory.**
**The error memory can be read by performing a single diagnosis from the control unit.**
**To go to the single diagnosis, click the button at to the left-hand side.**

**Possibility 3: Status: Module does not respond**


**Verify if the control unit is build in into the car. Otherwise verify the cable connection to the computer and to the car. Also verify the battery voltage of the car.**

# B: Single Diagnosis:

**The ´Single Diagnosis´ gives you detailed information about the control units and the status of the control unit.**

**To go to Single Diagnosis: Click the ´Single Diagnosis´ button.**


**The control units are divided in the following menus :**

1. ► **Driveline**
2. ► **Chassis Systems**
3. ► **Body**
4. ► **Information and Communications**
5. ► **Air-conditioning**

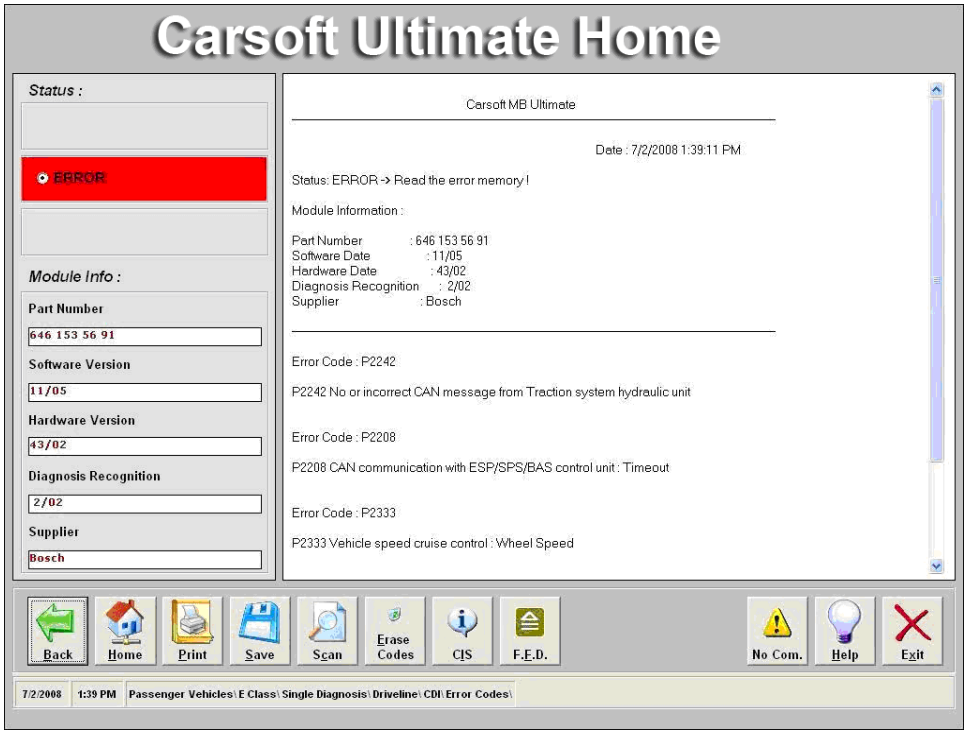
**In these menus, depending to the selected car, car-type and control unit, multiple functions are possible:**

Example **‘Drive Line’**


Example **‘CDI Control Unit’**

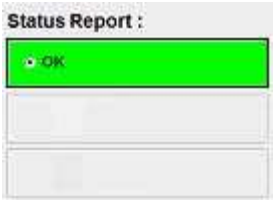

1. ► **Read/Erase Fault Codes**
2. ► **Live Data**
3. ► **Component**
4. ► **Component Tests**
5. ► **Component Activations**
6. ► **Control Unit Coding**
7. ► **Component Coding**
8. ► **Adaptation Functions**
9. ► **Etc. …**

# Single Diagnosis Test Results:




**Tip: All control units have stored errors. Some control units have actual errors.**

## Possibility 1 ► Status: OK

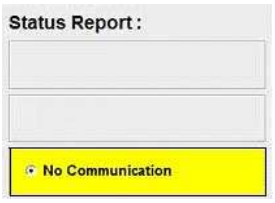



**No actual or stored errors stored in the specific control unit.**

## Possibility 2 ► Status: Error

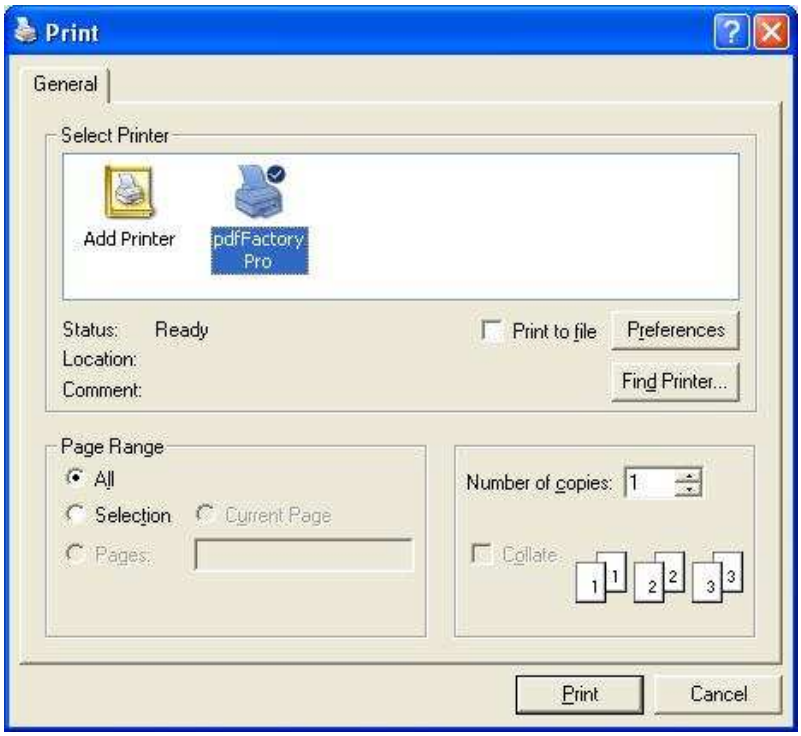

**Errors stored in the error memory.**

## Possibility 3 ► Status: No Communication

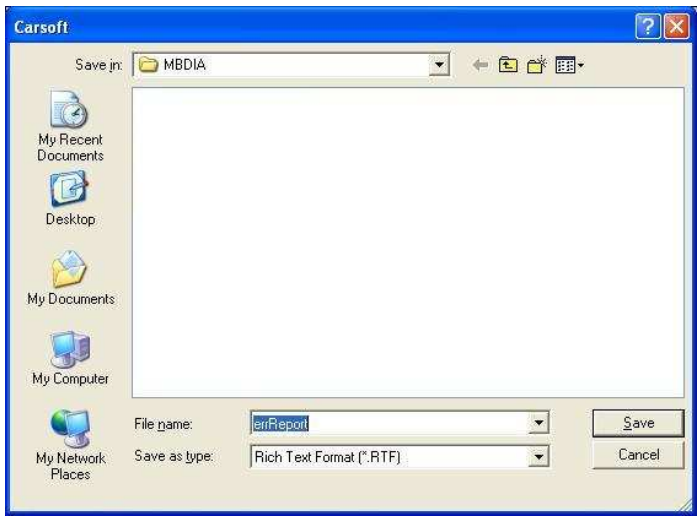



**Verify if the specific control unit is build in into the car. Otherwise verify the cable connection to the computer and to the car. Also verify the battery power of the vehicle.**

**► Click the PRINT button here, you have the opportunity to print the diagnosis result.**




**► Click the SAVE button here, you have the opportunity to save the diagnosis result.**



► **Click the CIS button to start the Carsoft information system.**


**In order to continue you have first have to make the vehicle selection:**

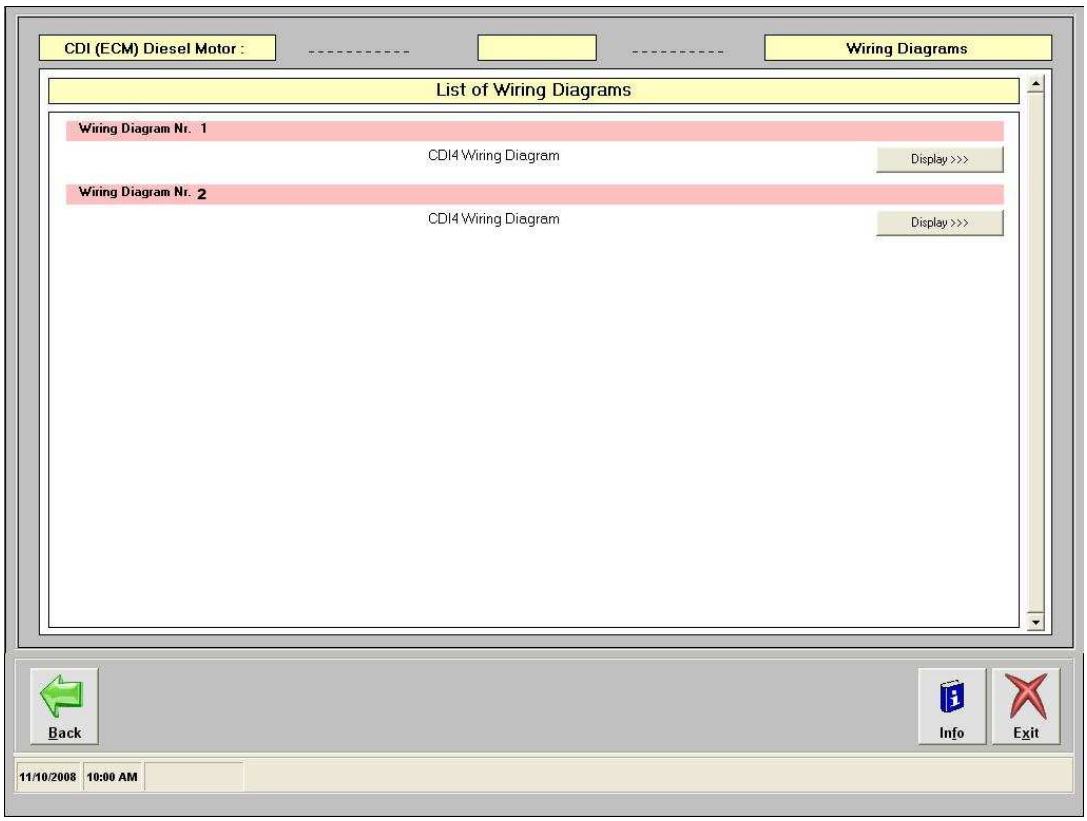
> Step 1: Select the Car (Vehicle Type)
(Models are listed in numerical order)
> Step 2: Select The Engine No.
> Step 3: Select The Error code
(If there are multiple error codes, each one can be selected, but they must be selected on at a time.)

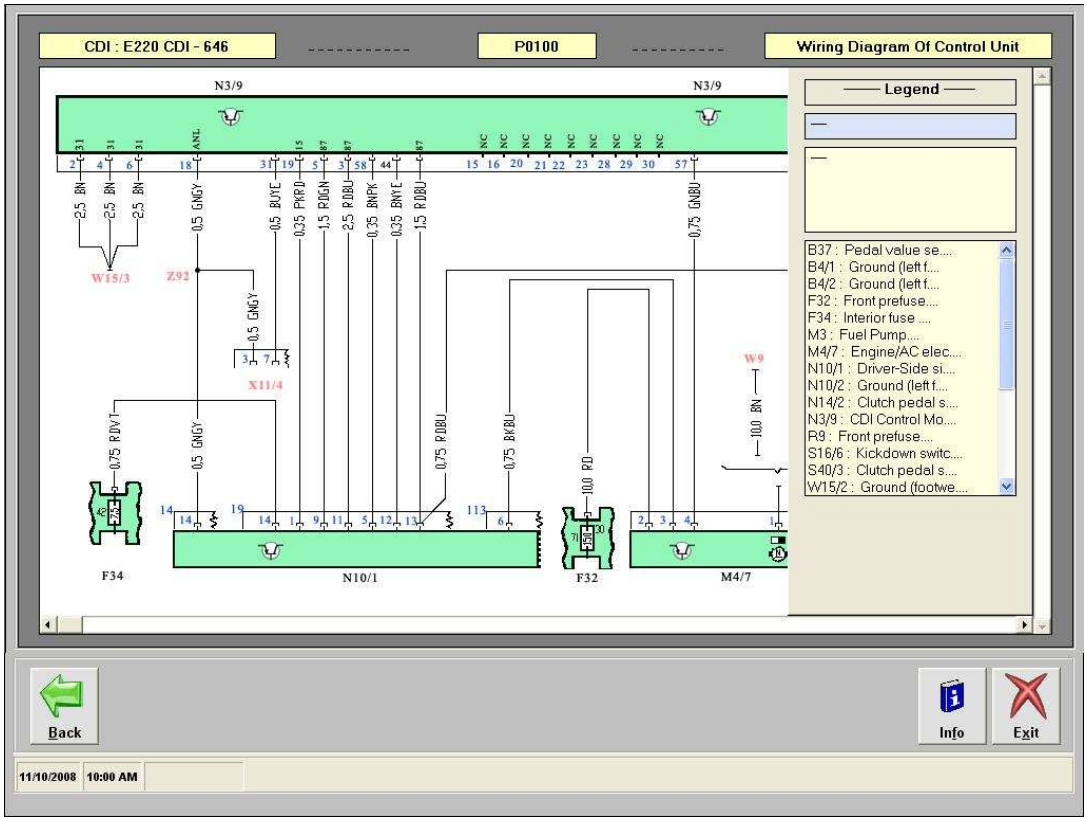
After the selection the CIS buttons will be enabled.
(Wiring Diagram/Component Information/Error Code Explanation)

# 1) Wiring Diagram

Depending to the vehicle and system selected, several choices may be available.

For some systems, due to the complexity, there may be two or more diagrams available.

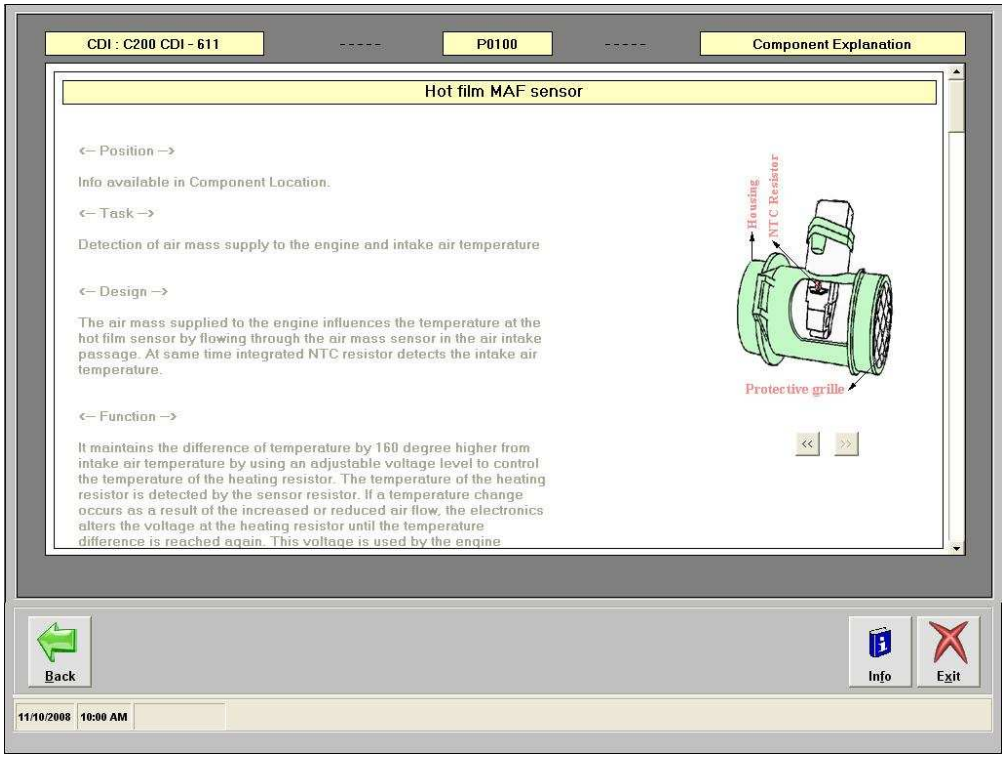


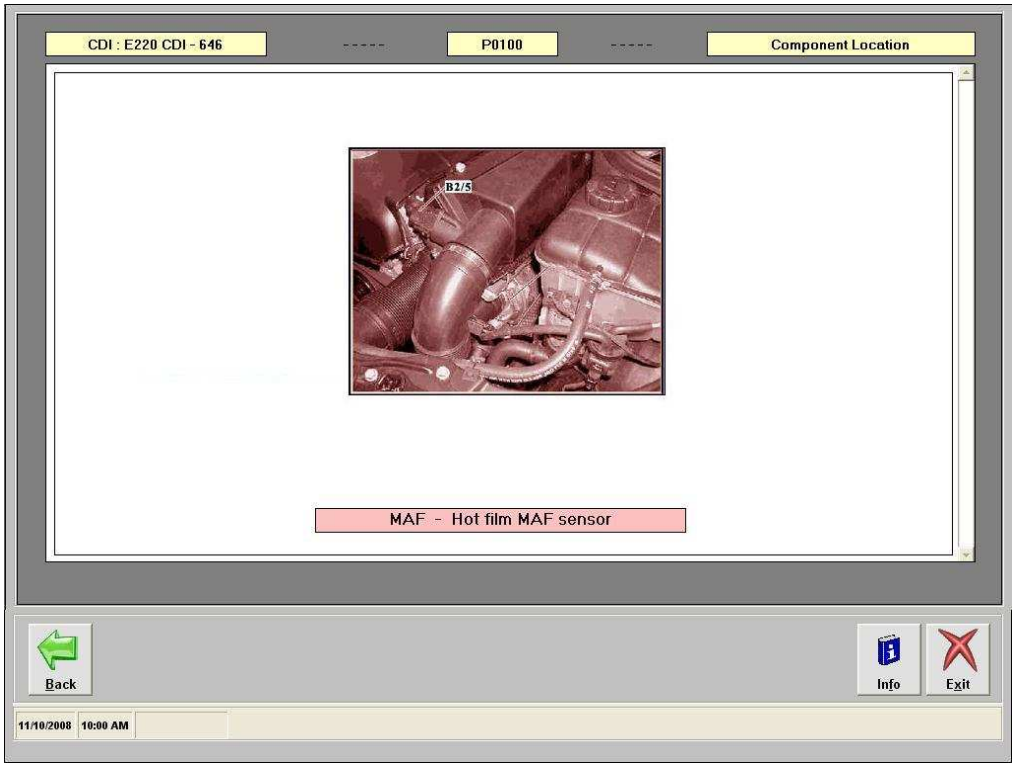
# 2) Component Information

The component information info provides the following information on a component:

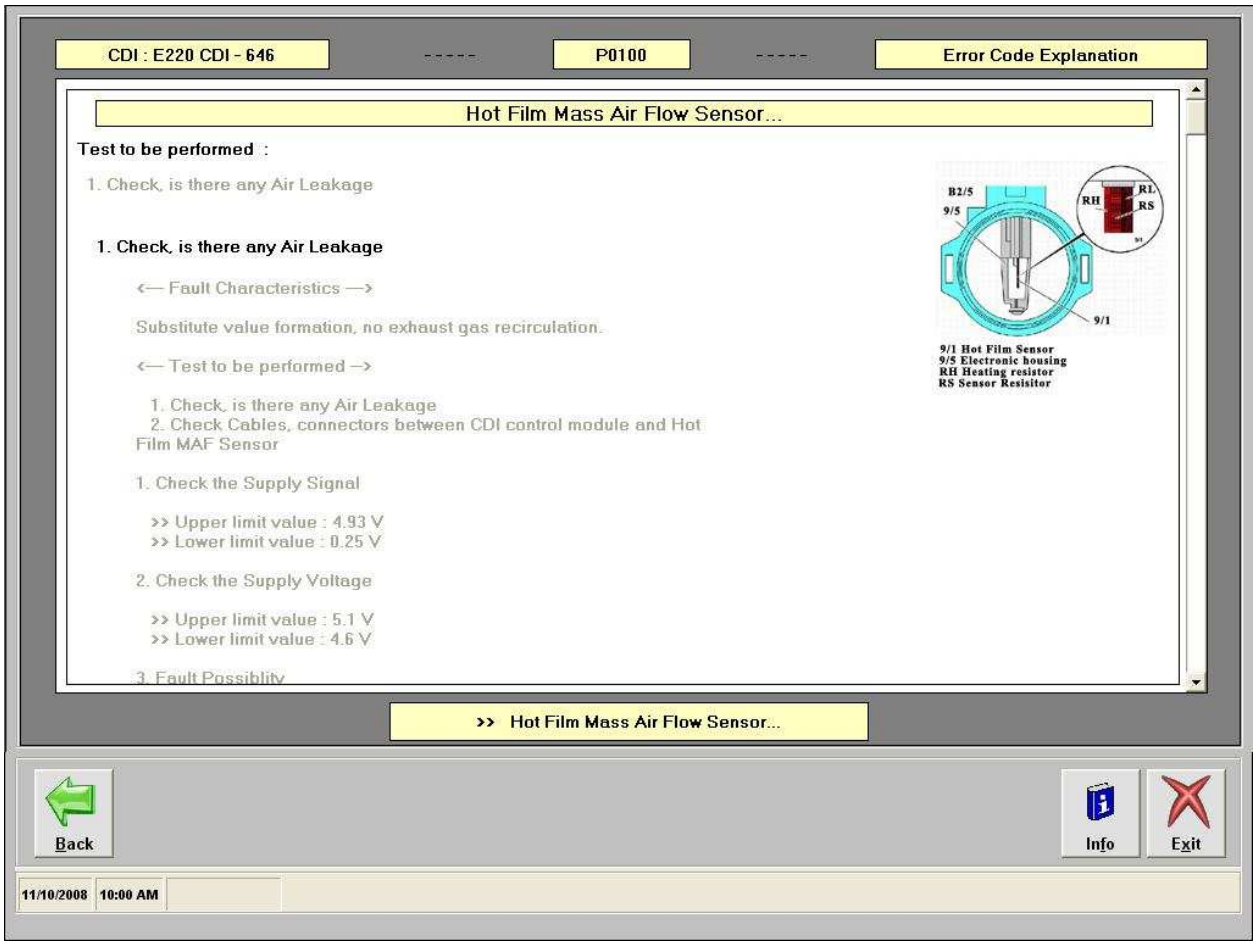
- Position
- Task
- Function / Design




If you click on the **'Location'** button the component location page will be opened.



# 3) Error Code Explanation



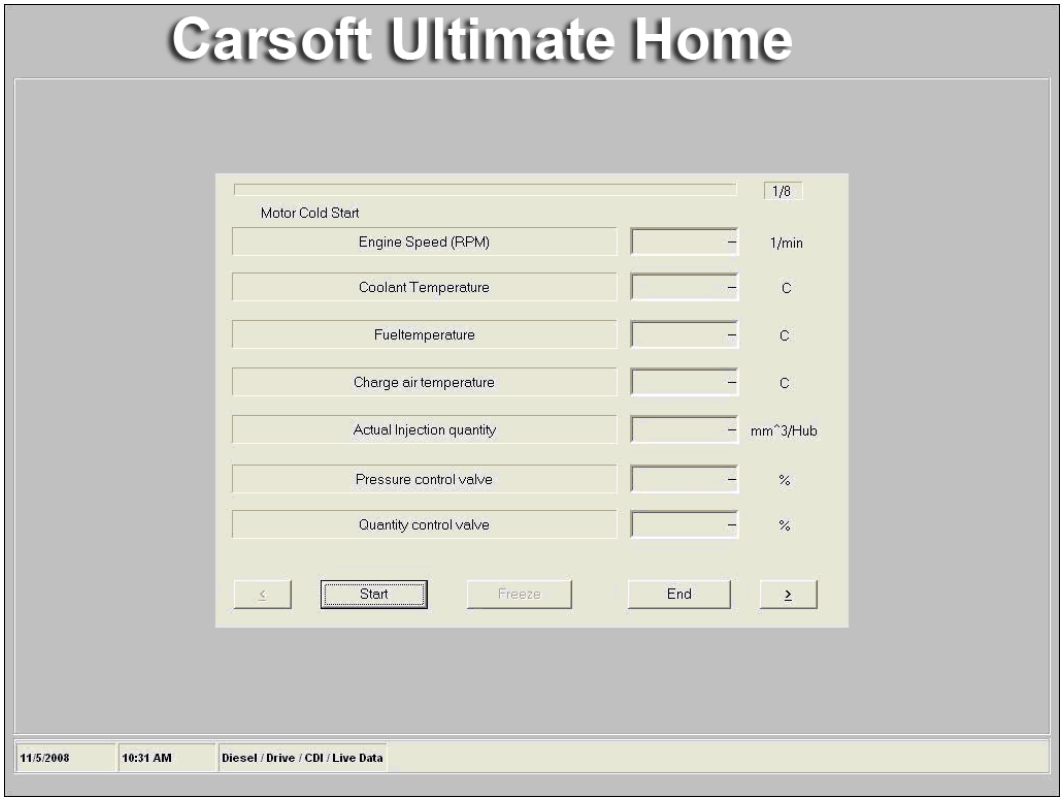

Types of information on the error code explanation page:

- Error Code
- Explanation of when fault occurs (Failure mode, Conditions, Etc. …)
- Test Programs
- Test values and parameters
- Test Procedure
- Pictures or diagrams may also be available depending on error codes.

Click the **'Exit'** button to exit the CIS part.


Click the **'Back'** button to return to the CDI page.

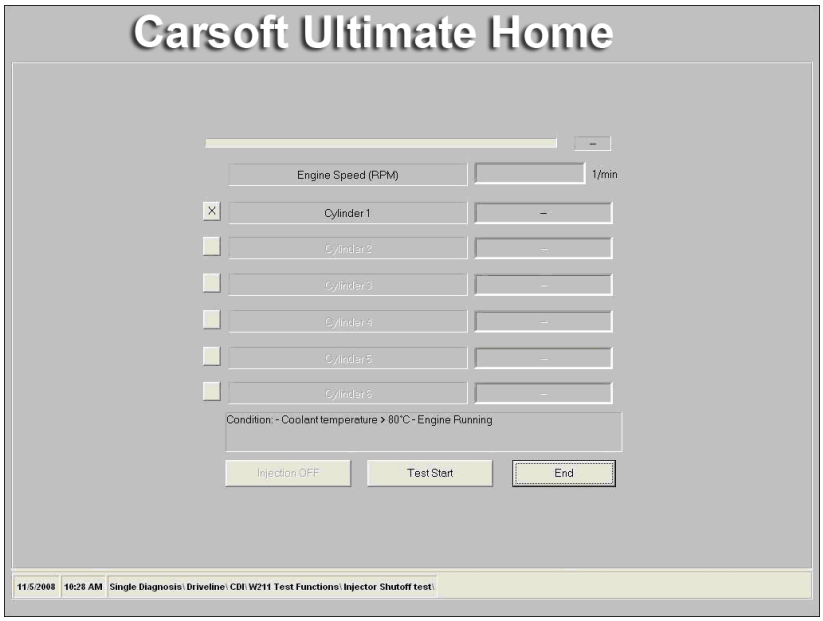

Here you can enter the available functions for the selected control unit, can be entered by clicking them. >>> Example: **'Live Data'**



Click the **‘Back’** button to return to the CDI page.


Here you can enter the available functions for the selected control unit, can be entered by clicking them. >>> Example **‘Tests’**


Here you can select the required test.



# Used Buttons


**Back ► To return to the previous screen**


**Main ► To return to the Main Menu**


**Start ► To start the total diagnosis**


**Help ► Help file**


**Scan ► To start scanning the error memory**


**Erase Codes ► To erase the error codes**


**No Com. ► No Communication with the vehicle**


**Save ► To save the data to disk**


**Print ► To print the data on paper**


**Exit ► To exit the program**


**Manual ► To open the manual**

# Used Abbreviations

4MATIC - Automatically controlled four-wheel drive
AAC(KLA) - Automatic air conditioning
AB - Airbag
AB - Airbag Control Unit
ABC - Active body control
ABS - ABS Control Unit
ABS - Antilock brake system
ACS(KLS) - Air conditioning seat
ACSR(AKSE) - Automatic child seat recognition
ADM(ASA) - Automatic dimming mirror
ADS - Adaptive damping system
AGW - Audio Gateway Control Unit
AHV - Trailer hitch
AIRCO - Air conditioning Control Unit
AIRMatic - Airmatic System Control Unit
AKR - Semi Automatic Gear Box Control Unit W168
ALR(AFE) - Automatic child seat recognition
APS - Auto pilot system
ARMIN - Airbag with integrated emergency call system
AS(ATS) - Antenna systems
ASD - Automatic locking differential
ASR - Acceleration slip regulation
AT(AG) - Automatic transmission
ATA(EDW) - Anti-theft alarm
BA(RFH) - Backup assist
BAS - BAS Control Unit
BAS - Brake assist
BCAPC(ALDA) - Barometric pressure/charge air pressure compensation
BDC(UT) - Bottom dead center
BM(GM) - Base module
CA(SHI) - Closing assist
CAAC - Convenience automatic air conditioning
CAN - Controller Area Network (databus)
CC(TPM) - Cruise control
CCM(SKF) - Multifunction control module
CDC(CDW) - CD changer
CDI - Common Rail Diesel Engine Control Unit
CDI - Common Rail Diesel Injection (CDI)
CF(KFB) - Convenience feature
CIS - Carsoft Information System
CL(ZV) - Central locking
CNS - Communication and navigation system
COMAND - Cockpit Management and Data System
Command - Command
CRA(KW) - Crank angle
CST(CV) - Cabriolet soft top
CTEL(TEL) - Cellular telephone
CTU(ZAE) - Central triggering unit(airbag)
D2B - D2 bzs
DAS(FBS) - Drive authorization system
DBE - Overhead Control Panel Control Unit
DCM(TSG) - Door control module
DFI(EVE) - Diesel injection system (electronic distributor fuel injection)
DMNL(DH) - Diagnosis Manual
DSV(ASF) - Drive authorization system shut-off valve
DTR - Distronic
DTR - Distronic(distance cruise control)
DWR(AWR) - Distance warning radar
EA(EFP) - Electronic accelerator
EAS(EVL) - Electrically adjustable steering column

EBR(MSR) - Engine braking regulation
E-Call - Emergency call system
ECI - Electronic controlled ignition
EDC - Electronic diesel control
EDR - Electronic diesel regulation
EDS - Electronic diesel system
EDW - Anti Theft Alarm Control Unit
EGR(ARF) - Exhaust gas recirculation
EGS - Electronic Gearbox Control Unit
EHD - Electronic high pressure diesel injection system
EIS(EZS) - Electronic ignition switch control module
EL(ABL) - Exterior lights
ELC(ENR) - Electronic level control
EPC - Electronic power control
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MKL - Multicontour backrest
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MRS - Multifunction restraint system
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RFL(FFZ) - Radio frequency locking/electric central locking
RFL/RCL(FFZ/IFZ) - Radio frequency/remote central locking
RHR(KAF) - Retractable rear head restraints
RHS(RL) - Right hand steering
RST(RV) - Roadster soft top
RTC(HDFS) - Remote trunk lid closing
RTG(VHG) - Retractable trunk lid grip
RTR(HDF) - Remote trunk release
RUF - Catalytic converter retrofit version
RWD(HHS) - Rear window defroster
SA - Special equipment
SAM - Signal acquisition and actuation module
SAM - Signal Acquisition Module Control Unit
SAMH - Rear Signal Acquisition Module Control Unit
SAMV - Front Signal Acquisition Module Control Unit
SAMVL - Front Left Signal Acquisition Module Control
SAMVR - Front Right Signal Acquisition Module Control
SBC - Sensitive Brake Control Unit
SBC - Sensotronic Brake Control
SBE(GUB) - Seat belt extender
SBL - Seat ventilation
SCM - Steering column module
SEQ - Sequential automated manual transmission
SEQ(KSG) - Sequentronic manual transmission
SIH - Heated Seats Control Unit
SMS(RA) - Service microfiche system
SPS(PML) - Speed-sensitive power steering
SR(SHD) - Tilting/sliding roof
SRS - Supplemental restraint system
SSG - Sprintshift Control Unit
STH - Stationary heater
SVMCM(MSS) - Special vehicle multifunction control module
TAC(TAU) - Tempmatic air conditioning
TAL(HZS) - Trunk lid auxiliary lock
TC(TURBO) - Turbocharger

TD - Speed signal (time division) DI(EZL)
TDC(OT) - Top dead center
TELE AID - Telematic alarm identification on demand(emergency call system)
TN - Speed signal (EZL/AKR)
TPC(RDK) - Tire pressure control
TPM(RDU) - Tire pressure monitoring
TRIP(RRE) - Trip computer
TS(AS) - Towing sensor
TSG - Door Control Unit
TSGHL - Rear Left Door Control Unit
TSGHR - Rear Right Door Control Unit
TSGVL - Front Left Door Control Unit
TSGVR - Front Right Door Control Unit
TV - TV Tuner
TWC(KAT) - Three-way catalytic converter
UBF - Lower Control Panel Control Unit
UHI - Telephone
UPC - Upper control panel
UVS - Roadster Roof Control Unit
UVS(RVC) - Roll bar soft top control
VCS(SBS) - Voice control system
VD - Vario Roof Control Unit
VR(VD) - Vario roof
VSS(GES) - Vehicle speed signal
ZAS - Cylinder shut-off
ZGW - Central Gateway Control Unit
(+) - Positive
(-) - Negative
15 - Switched ground behind battery, ignition / starter switch output
15 DIA - Switched positive, diagnosis
15 UG - Switched positive, infused
15g - Switched positive, fused
15R - Switched positive, in ignition position l' 2 and 3
15X - Switched positive, in ignition position 2
30 - Battery, input from battery positive, direct
30Z - U battery circuit 30Z, infused
31 - Return circuit to battery negative or ground, direct
31b - Return circuit to battery negative or ground through switch or relay, switched negative
49 - Turn signal pulse generator input
49a - Turn signal' pulse generator output
49aL - Left turn signal pulse generator output
49aR - Right turn signal pulse generator output
50 - Starter control (direct)
53 - Wiper motor, input (+)
53b - Wiper (shunt)
54 - Stop lamp
56 - Headlamp beam
56a - Main beam and main beam indicator
56b - Low beam
58 - Limit, tail, license plate and instrument lamps
58L - Left clerance, tail licence plate and instrument lights
58R - Right clerance, tail licence plate and instrument lights
58d - Variable instrument / switch lighting
61 - Generator indicator
85 - Switching relay, winding end negative or ground
86 - Switching relay, winding start
87 - Relay contact for NC contact and changeover contact, input
87a - Relay contact for NC contact and changeover contact, first output (NC side)
87b - Relay contact for NC contact and changeover contact, second output
87ABS - Traction systems relay contact input
87F - Fanfare horns relay contact input
87KP - Fuel pump assembly relay contact input
87LP - Air pump relay contact input
87M1 - Circuit 87M1 fused

87M2 - Circuit 87M2 fused
A88F+ - Passenger airbag+
A88F- - Passenger airbag-
A8FA+ - Driver airbag+
A8FA- - Driver airbag-
ABBF- - Front passenger airbag -
ABBF+ - Front passenger airbag +
ABFA- - Driver airbag -
ABFA+ - Driver airbag +
AKSE - Automatic child seat recognition
Anten. - Antenna
ASR-OFF - ASR-OFF switch
AP - Output proportional
AP EV1 - Output proportional injector 1
AP EV2 - Output proportional injector 2
AP EV3 - Output proportional injector 3
AP EV3 - Output proportional injector 4
AP MO+ - Output proportional motor+
AP MO- - Output proportional motor-AP
AP NWS - Output proportional camshaft sensor
AP ULK+ - Output potentiometer recalculated air flap+
AP ULK- - Output potentiometer recalculated air flap-
AS - Output shift
AS LSHK - O2 sensor heater, downstream TWC
AS SLV - Ouptput shift air pump switchover valve
ASR OFF - ASR OFF switch
Ay- - Lateral acceleration-
Ay+ - Lateral acceleration+
B33 On - ATA ON tilt sensor
B33 Off - ATA OFF tilt sensor
B33 Alarm - ATA ALARM tilt sensor
B+ - Battery positive
B- - Battery negative
BBWL - Brake pad wear, front left
BBWR - Brake pad wear, front right
BF - Front passenger
BL - Stop Lamp
BLA - Stop light shutoff
BS - Stop lamp switch
CAN BUS(H) - CAN (high)
CAN BUS(L) - CAN (low)
CAN IH - CAN interior bus (high)
CAN IL - CAN interior bus (low)
CDW 30 - CD changer circuit 30
CDW 31 - CD changer circuit 31
CDW - CD changer control
Crash Sig. - Crash Signal
Crash-A - Crash Signal output
D+ - Dynamo, positive
D- - Dynamo, negative
D28 IN - D2-BUS, input
D28 OUT - D2-BUS, output
DF - Dynamo field
DF ST A - Speed frequency control module output
DFVL - Speed sensor front left
DFA-VL - Speed sensor output front left
DFHA - Speed sensor rear axle
DFHL - Speed sensor rear left axle
DFHR - Speed sensor rear right axle
DFVL - Speed sensor front left axle
DFVR - Speed sensor front right axle
DG - Pressure sensor
DIA - Diagnosis
DRS - Yaw rate sensor

EA - Input analogue
EF - Input frequency
E-AUS – Input signal -off
E-KSK - Input-shift signal -shift contact control
E-S+B - Input-shift signal -set / accelerate
E-S-B - Input-shift signal -set / accelerate (decelerate)
E-WA - Input-shift signal -resume
F - Fanfare horns
FA - Driver
FSA+ - Hands free system+
FSA- - Hands free system-
GAL - Speed-depended volume control
GND - Ground
GS - Emergency tensioning retractor
GS8FA+ - Passenger emergency tensioning retractor, positive
GS8FA- - Passenger emergency tensioning retractor, negative
GSFA+ - Driver emergency tensioning retractor, positive
GSFA- - Driver emergency tensioning retractor, negative
(H) - High
HAS - Hand brake, signal
HHS - Rear window defroster
HL AV - Rear left solenoid valve pressure reduction
HL EV - Rear left solenoid valve pressure holding
HR AV - Rear right solenoid valve pressure reduction
HR EV - Rear right solenoid valve pressure holding
Ke - License plate lamp
KP - Fuel pump group
(L) - Low
LP - Air pump
L/R - Left/right
LS - Release switch
LWS - Steering angle sensor
M1 - Ground 1
M2 - Ground 2
MBBVVL - Ground, left front brake pad wear
MBBVVR - Ground, right front brake pad wear
MDFHL - Ground, left rear speed sensor
MDFHR - Ground, right rear speed sensor
MDFVL - Ground, left front speed sensor
MDFVR - Ground, right front speed sensor
Mikr.+ - Microphone positive
Mikr.- - Microphone negative
ML - Ground (power ground°
MMV - Solenoid valve
MRA - Engine relay actuation
MRU - Engine relay voltage
MUTE - Muting
MV+ - Solenoid valve positive
N.C. - Not connected
Ne - Fog lamp
NSL - Rear fog lamp
Not Used - Not connected
P - Parking lamp
R1-LED - LED display, rear window defroster switch
R1S - Control signal, rear window defroster switch
Rue. - Backup lamp
S1 - Brake assist release switch, switch position 1
S2 - Brake assist release switch, switch position 2
SB - Accelerate (cruise control)
SBS - Side airbag sensor
Sig. Diag. - Diagnose Signal
SN1 - Lock switch 1
SN2 - Lock switch 2
SP1M - Specified value potentiometer 1 ground

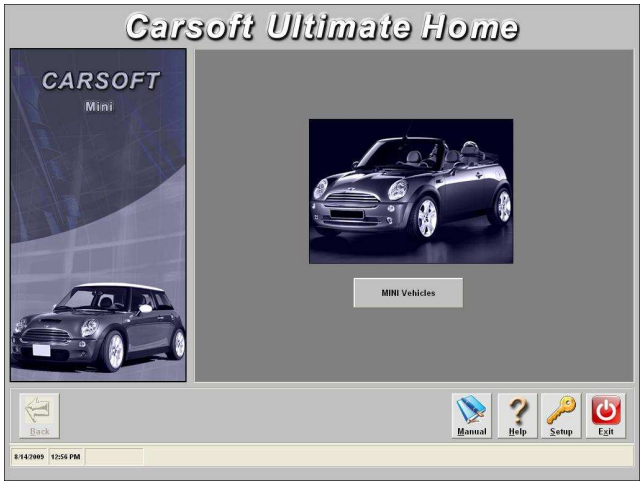
SP1S - Specified value potentiometer 1 signal
SP2M - Specified value potentiometer 2 ground
SP2S - Specified value potentiometer 2 signal
STATUS - Speed sensor output, status
SV - Decelerate (cruise control)
TK - Door contact
UB - Voltage, operation
UG - Unfused
UMRFP - Return flow pump monitor
USP1 - Voltage supply specified value potentiometer 1
USP2 - Voltage supply specified value potentiometer 2
USV - Switchover solenoid valve
VL AV - Front left solenoid valve pressure reduction
VL EV - Front left solenoid valve pressure holding
VR AV - Front right solenoid valve pressure reduction
VR EV - Front right solenoid valve pressure holding
W/S - Program selection (winter/summer)
W0 - Selector lever position code O
W1 - Selector lever position code 1
W2 - Selector lever position code 2
W3 - Selector lever position code 3

# 8. Carsoft ®™ Ultimate Home BMW Start

Click the **'Launch Carsoft'** Icon to start the software.

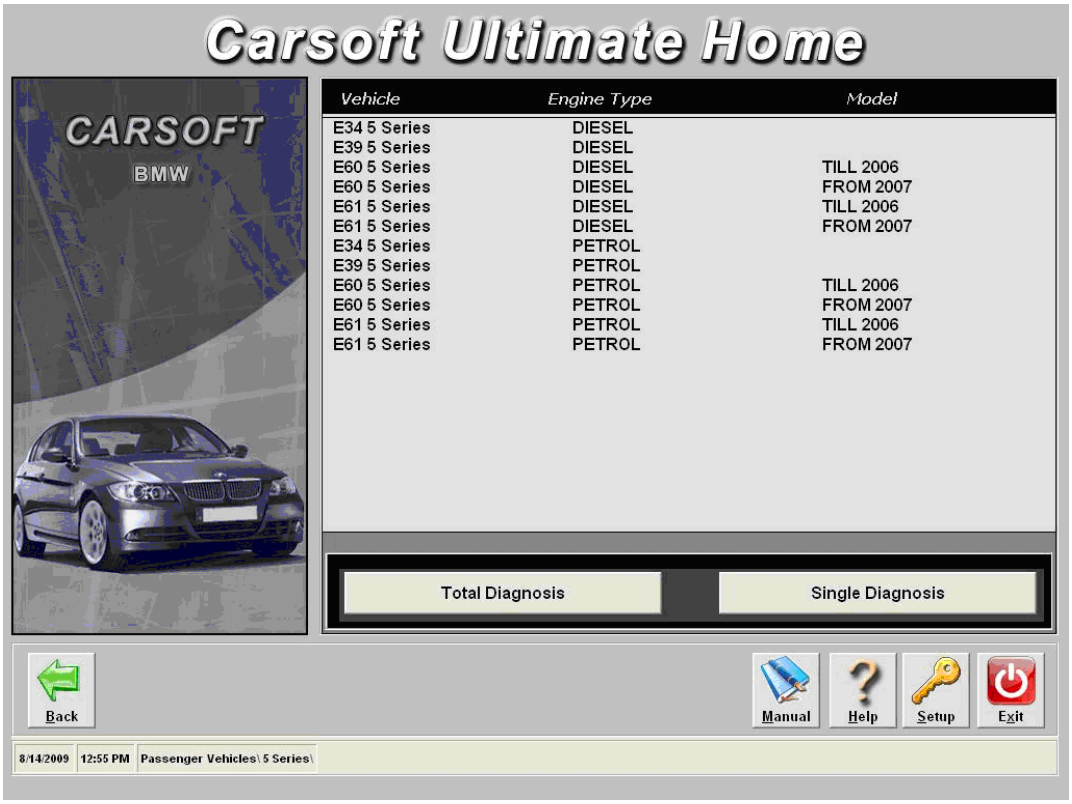

Click the **'BMW Ultimate'** or **'MINI Ultimate Home'** button


And the appropriate program will start.

After this you select the car type. (For Example **5 Series**)


After the car type, you select the specific model (For Example **E60 5 series Diesel Till 2006**)




**Now you can make a selection between:**

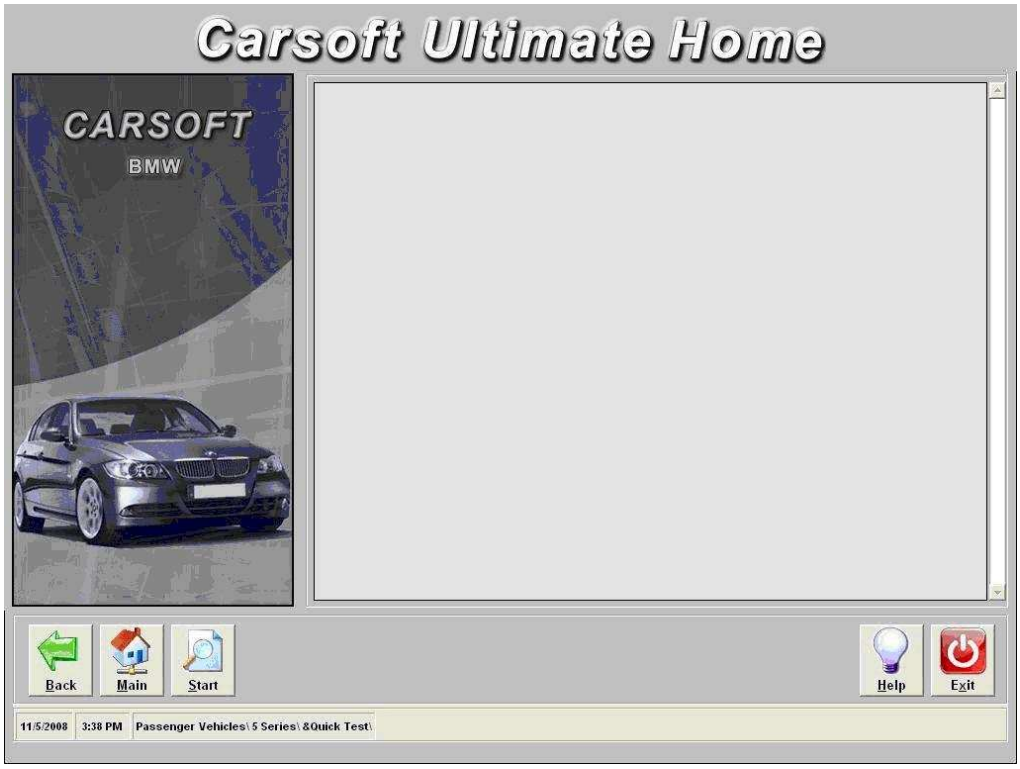
**A: Total Diagnosis: Click 'Total Diagnosis'**

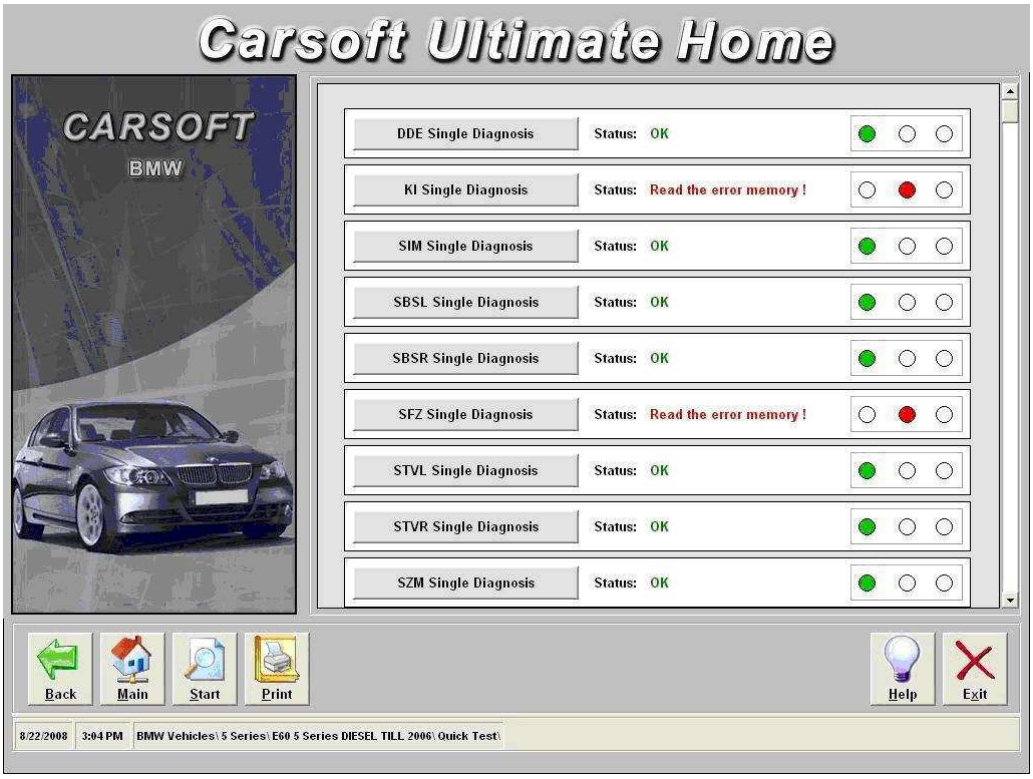
**B: Single Diagnosis: Click 'Single Diagnosis'**

# A: Total Diagnosis:

**The ´Total Diagnosis´ gives you an overview of the control units which are build in into the car. It also gives you an overview of the status of each control unit.**

**To start the Total Diagnosis: Click the ´Start´ button.**



**Possibility 1: Status: OK**


**No actual or stored errors stored in the control unit.**

**Possibility 2: Status: Read the error memory!**

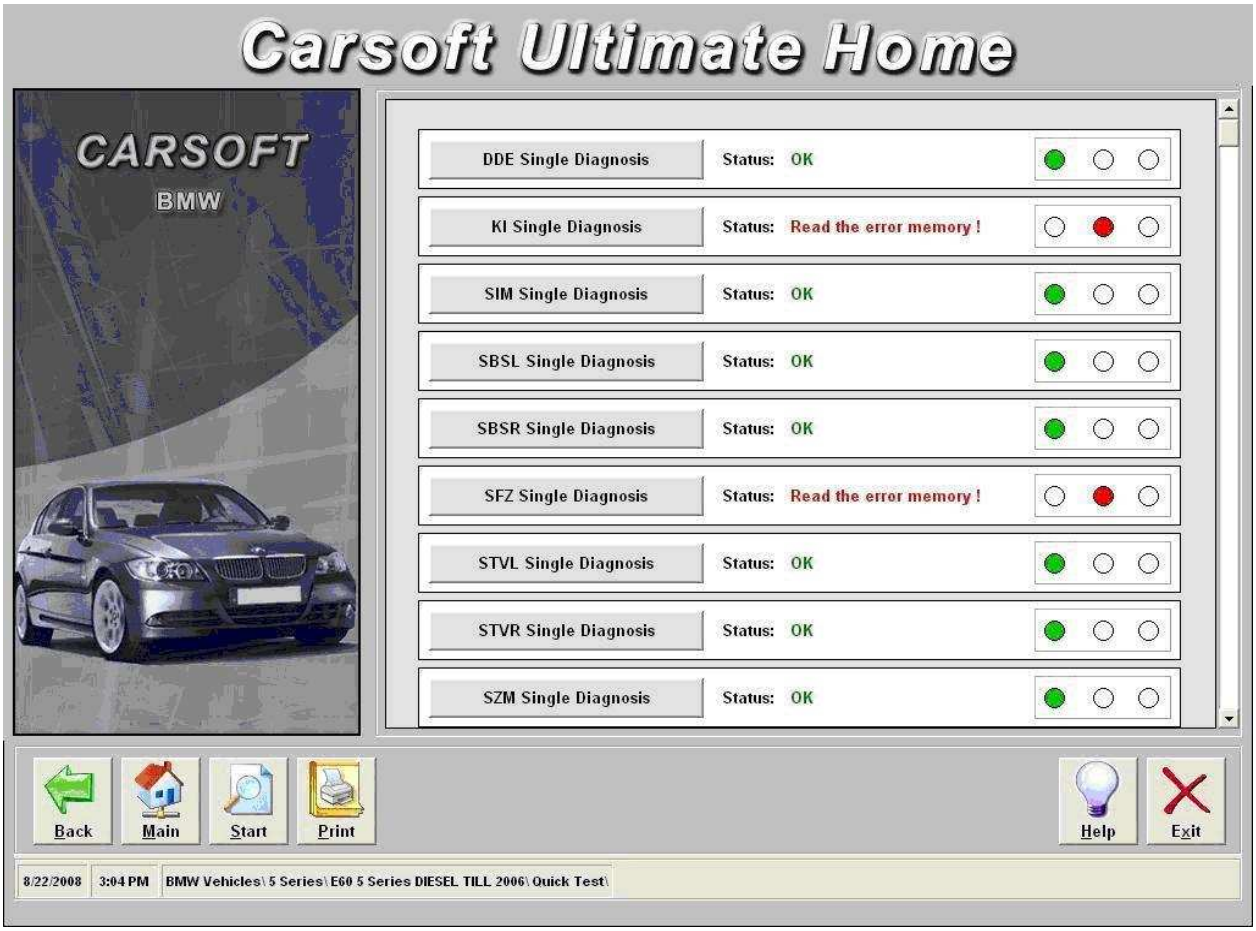

**Errors stored in the error memory.**
**The error memory can be read by performing a single diagnosis from the control unit.**
**To go to the single diagnosis, click the button at to the left side.**

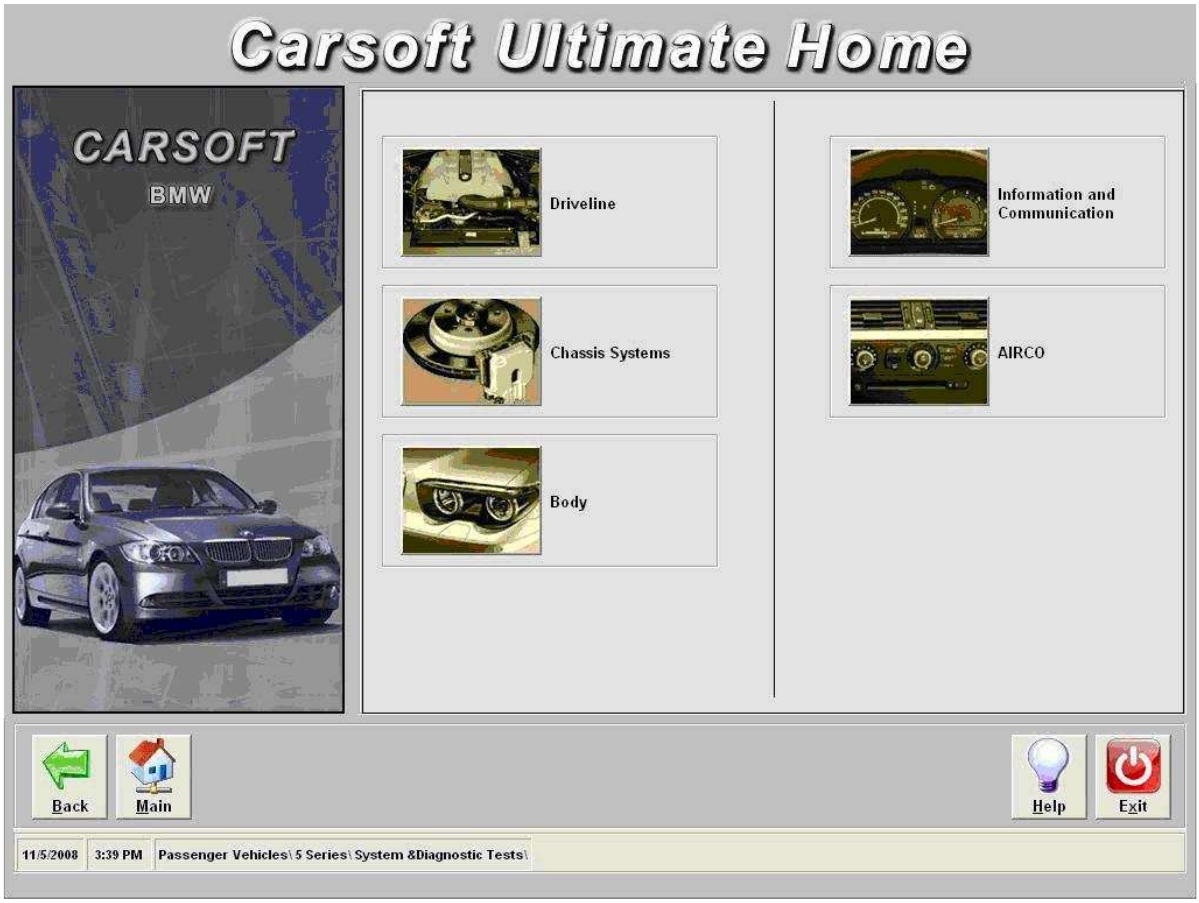
**Possibility 3: Status: Module does not respond**


**Verify if the control unit is build in into the car. If so, verify the cable connection to the computer and car. Also check if the battery voltage of the car is sufficient. (>12V)**

# B: Single Diagnosis:

**The ´Single Diagnosis´ are giving you detailed information about the control units and the status of the control unit.**



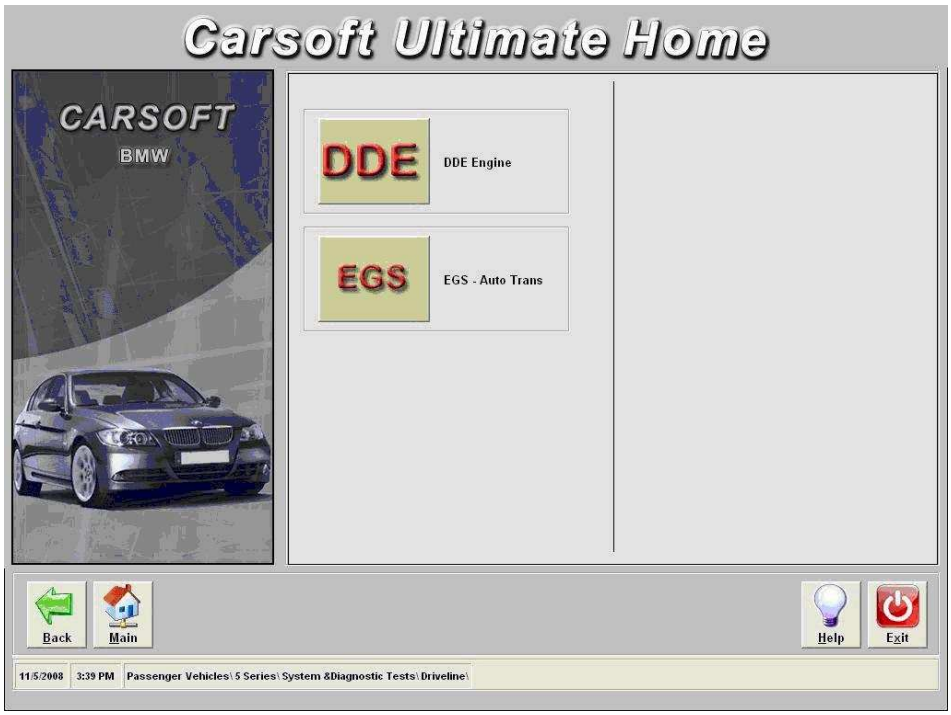



**The control units are divided in the following menus:**

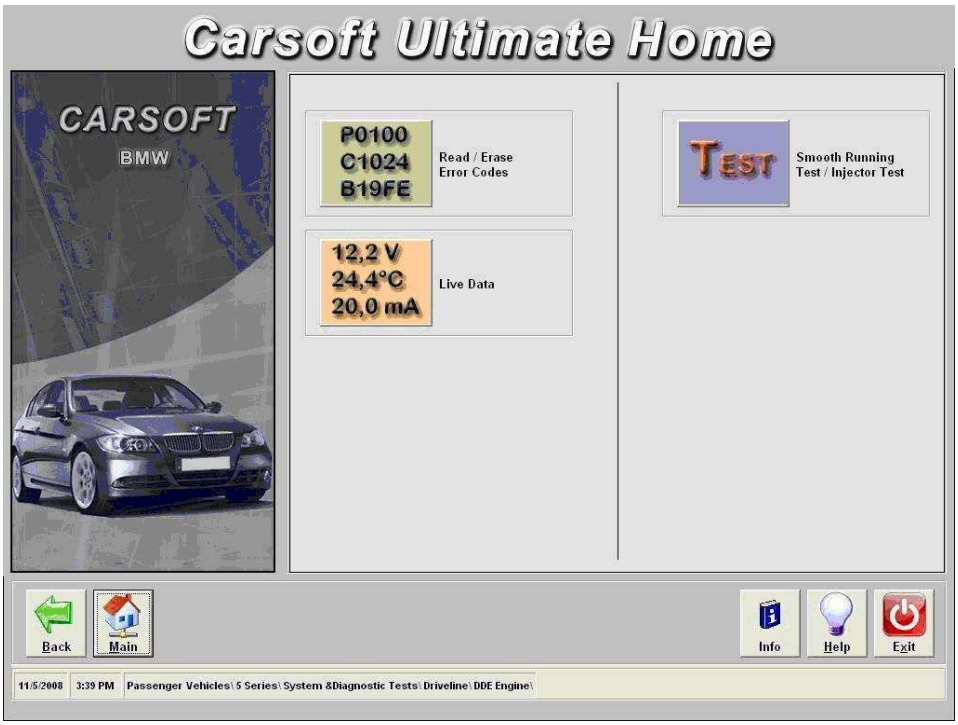
1. ► **Driveline**
2. ► **Chassis Systems**
3. ► **Body**
4. ► **Information and Communication**
5. ► **Air-conditioning**

**In these menus, depending to the selected car, car-type and control unit, multiple functions are possible:**

Example **‘Drive Line’**

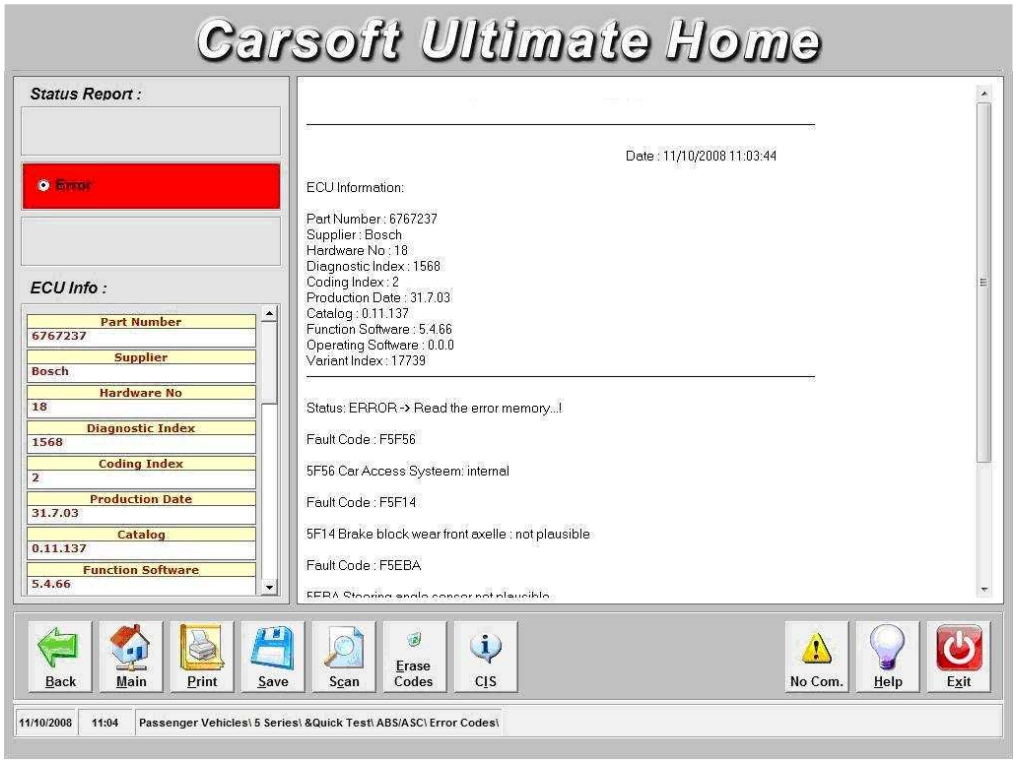



Example **‘DDE Control Unit’**




1. ► **Read/Erase Fault Codes**
2. ► **Live Data**
3. ► **Component Info**
4. ► **Component Tests**
5. ► **Component Activations**
6. ► **Adaptation Functions**
7. ► **Etc. …**

# Single Diagnosis Tests Results:



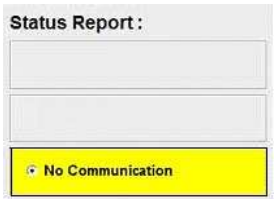

**Possibility 1** ► **Status: OK**


**No actual or stored errors stored in the specific control unit.**

**Possibility 2** ► **Status: Error**


**Errors stored in the error memory.**

**Possibility 3** ► **Status: No Communication**




**Verify if the specific control unit is build in into the car. Otherwise verify the cable connection to the computer and to the car. Also verify the battery power of the vehicle.**

Control UIormation:

# Used Buttons


**Back ► To return to the previous screen**


**Main ► To return to the Main Menu**

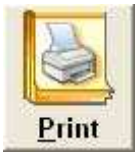
**Start ► To start the Quick Test**


**Scan ► To start scanning the error memory**


**Erase Codes ► To erase the error codes**


**Manual ► User Manual**


**Save ► To save the data to disk**




**Print ► To print the data on paper**


**Exit ► To exit the program**

# Used Abbreviations

AB - Airbag
ABL - Brake system warning Lamp (2 color)
ABS - Anti-lock Braking System
AC - Air Conditioning
ACC - Active Cruise Control
ACS - Active Comfort Seats
ADB(X) - Automatic Differential Braking
ADS - Engine intake air control
ADV - Windshield wiper pressure control
AEGS - Automatic Electronic Gearbox Control (also EGS)
AFM - Air Flow Meter
AGD - Suction silencer
AGR - Emission reduction
AGS - Adaptive transmission control
AG - Automatic Gearbox (transmission)
AHK - Active rear-axle Kinematics
AHK - Trailer hitch
AHM - Trailer Module (not for US models)
AHPS - Advanced HPS
AIC - Automatic Interval Control (rain sensor)
AKF - Activated carbon canister
AKS - Active head restraint
AKS - Pressure regulating device
ALC - Automatic Light Control
ALR - Automatic Lamp Range Adjustment
AMM - Air Mass Meter
AMP - Radio system Amplifier
ARI - Car radio information system
ARS - Active Roll Stabilization
ASC - All Season traction
ASC-EZA - ASC w/ engine timing and injection intervention
ASC+T - ASC+ Traction control
ASK - Audio System controller
ASR - Self starter block relay
AT - Remanufactured part
AT - Antenna
ATF - Automatic Transmission Fluid
ATL - Exhaust gas turbo charger
AUC - Automatic air recirculation
AUT - Automatic transmission
AVT - Antenna amplifier Tuner
AZD - Tightening torque specifications
A/D – Analogue/Digital
B - Benzine (gasoline)
BAT - Battery
BC - Board Computer
BC1 - Body Controller 1
BL - Brake Light
BLS - Brake Light Switch
Bluetooth - A wireless interconnection technology
BMBT - Board Monitor
BS - Block diagram
BST - Battery Safety Terminal
BVA - Brake pad wear indicator
BZM - Centre console control centre
BZMF - Centre console control centre, rear
CAN – Controller Area Network
CAN-Bus - Controller Area Network (bus)
CANH-Bus - CAN bus, High
CANL-Bus - CAN bus, Low
CANP - fuel tank ventilation valve
CAS - Car Access System
CBC - Corner Braking Control
CBS - Condition Based Service
CCM - Check Control Module
CD - Control Display
CDC - Compact Disk Changer
CDS - CD player
CIM - Chassis Integration Module
CO - Carbon monoxide
COMBI – Electronic Instrument Cluster
CON - Controller
CVM - Convertible top Module
CVT - Constantly Variable Transmission
CW - Drag coefficient
CWP - Cold Weather Package
D1 - Xenon light/ gas discharge
D-Bus - Diagnosis bus (same as TXD)
DBC - Dynamic Brake Control
DBS - Dynamic Braking System
DCS - Dealer Communication System
DE – Diagnostic Unit
DD - Dynamic motor Drive
DDE - Digital Diesel Electronics
DIN - German industrial standards
DIS - Diagnosis and Information System
DISA - Differential air intake control
DIVA - Continuously variable length intake runners
DK - Throttle housing/valve
DKB - Throttle w/ brake intervention
DKE – Throttle Increase
DKI - Throttle position
DKR - Throttle reduction
DKT - Throttle position signal
DKV - Preset throttle position value
DME - Digital Motor Electronics
DM-TL - Diagnostic Module Tank Leakage
DOHC - Double Over Head Camshafts
DS - Gasket set
DSC - Dynamic Stability Control
DSP - Digital Sound Processing
DTC - Diagnostic Trouble Code (SAE)
DTC - Dynamic Traction Control
DWA - Theft deterrent system
DWS - Tire pressure Warning System
DZM - revolution counter
E - “in” (Ein)
EBV - Electronic Brake force proportioning
ECE - European market version
ECM - Engine Control Module
ECU - Electronic Control Unit
EDC - Electronic Damper Control
EDR - Electronic throttle control
E-KAT - Electrically heated catalytic converter
EZA - See ASC-EZA
ECM - Engine Control Module
ECO - Controller for I-Drive system
EDC - Electronic Dampening Control

EDC-K - Electronic Dampening Control - Continuous
EDK - Electronic throttle valve
EDS - Pressure regulator
EFH - Electric window lifter
EGS - Electronic transmission control
EH - Electronic-Hydraulic
EHC - Electronic Height Control
EKM - Electronic body Module
EKP - Electric fuel Pump
ELV - Electronic steering lock
EM - Electro-Mechanical
EMF - Electro-Mechanical parking brake
EML - Electronic Motor Load regulation
EMV - Electro-Magnetic sensitivity
EO - Component location
EPC - Electronic Parts Catalogue
EPROM - Erasable/ Programmable chip Memory
ETK - Electronic parts catalogue
ETM - Electrical Troubleshooting Manual
ESS - Electronic anti-theft device
EV - Injection Valve
EWS - Electronic drive-away protection
FB - Function description
FBC - Fading Brake Control
FBD - Remote control services
FBZV - Radio frequency locking system
FGR – Vehicle Speed Control (Cruise Control)
FH - Window lifter
FHK - Rear Heater/ air conditioner
FLC - Automatic Light Control
FRU - Flat Rate Unit
FS – Crash Sensor
FZV - Central lock receiver
GAL - Speed dependent sound volume
GM - General Module
GMR - Yaw moment control
GPS - Global Positioning System
GRII - Cruise Control
GRS - Rotation Rate Sensor
GS – Belt Tensioned
GWK - torque converter lock-up control
H - “rear”
H2 - Xenon headlights
HA - Rear Axle
HC – Hydro Carbon
HD - Heavy Duty
HDC - Hill Decent Control
HFM - Hot Film air mass Meter
HG - Manual Gearbox (transmission)
HKL - Hydraulic trunk lid Lift
HLM – Hot Wire Air Mass Meter
HPS - Head Protection System
HR - Heater control (from ETK)
HVA - Hydraulic Valve Adjuster
Hz – Hertz (Cycle)
I-Bus - Information bus
IB - Interior lighting control signal
IHKA - Automatic Heating and A/C
IHKAF - IHKA w/ micro filter
IHKR - Regulated Heating and A/C
IHKRF - IHKR w/ micro filter
IHKS - Standard Heating and A/C
IHPD - Internal High Pressure Deformation
IHR - Integrated Heater control
IKE - Instrument cluster Electronics
ILH - Interior Lighting, rear
ILV - Interior Lighting, front
IMS - Instant Mobility System
IR – Infrared
IRS – Infrared Locking System
ISC – Idle Speed Control
ISIS - Intelligent Safety Integration System
ISN - Individual Serial Number
ISOFIX - Standardized mounts for child restraints
ITS - Head airbag assembly/ Inflatable Tubular Structure
IVM - Integrated power supply Module
K-Bus - Body bus
KAT - Catalytic converter
KATON - Converter creating (signal)
KD - Kick-Down
KHI - Interface for headphones
KL - Terminal designation
KL15 - Run bus (ignition switch run position)
KL30 - Battery bus (hot at all times)
KL31 - Ground bus (chassis ground)
KL50 - Start bus (ignition start position)
KLR - Accessory bus
KO - Compressor “on” signal
KOMBI - Instrument cluster
KOREL - Compressor relay signal
KR – Contact Ring
KSK - Knock Sensor
KVA - Fuel consumption signal/value
KW - Crankshaft
KW - Kilowatt
LCM - Lamp Check Module
LDP - Leak Diagnosis Pump
LEV - Low Emissions Vehicle
LEW - Lateral acceleration sensor
LHD - Left-Hand Drive
LKM - Lamp control Module
LL - Closed throttle
LM - Light Module
LMM - Air flow meter/sensor
LMR - Light alloy wheel
LRA - Vertical headlight aiming
LSM - Steering column memory
LSZ - Lamp switching center
LVA - Air supply system (for EHC system)
LWR - Vertical headlight aim control
LWS-5 - Steering angle sensor
M-Bus - IHKA/IHKR stepper motor bus
MAL - Centre armrest
MBC - Maximum Brake Control
MDK - Motorized throttle valve/system
MFL - Multi-Function steering wheel
MFC - Multi-Function Controller
MFU - Multi-Function Clock
MID - Multi-Information Display
MIL - Malfunction Indicator Lamp (SAE), “check engine” Lamp
MIR - Multi-Information Radio
MMC - Multimedia Changer
MOST-Bus - Media Oriented System Transport bus
MRS - Multiple Restraint System

MSR - engine drag torque Regulation
MV - Magnetic Valve (solenoid Valve)
n-ab - Rotational speed, transmission (rpm)
n-mot - Rotational speed, engine (rpm)
NAVI - Navigation module
NG - New Generation
NG - Tilt sensor
NOX - Nitrogen Oxides/ exhaust gas recirculation
NSD - Rear muffler
NSL - Rear fog Lamp
NSW - Fog lamp
NTC - Negative Temperature Coefficient
NW - Camshaft
OBC - On-Board Computer
OBD - On-Board Diagnosis (SAE)
P/N – Park/Neutral position
P-Bus - Periphery bus
PB - Pin assignments
PBS - Parts Bulletin System
PDC - Park Distance Control
PGS - Passive Go System
PM - Power Module
PP – Impact Pad
PTC - Positive Temperature Coefficient
RLS - Rain-Light Sensor
PWG - Pedal position sensor/ potentiometer
RA - Repair instructions
RAM – Random Access Memory
RAL - Aluminium wheels
RAL - Standard colour
RDC - Tire pressure Control
RDS - Radio Data-broadcast System
RDW - Tire pressure Warning
RHD - Right-Hand Drive
RM - Relay Module
ROZ - Research Octane rating/ fuel grade
RPA - Tire puncture warning
RPS - Rollover Protection System
RS - Repair kit
RSW - Back-up lamp
RXD - Wake-up Diagnosis line
RZV - Direct stationary ignition
SASL - Satellite, A-pillar left
SASR - Satellite, A-pillar right
SAV - Sport ACTIVITY Vehicle
SB - Fuse assignments
SBE - Seat occupancy detector/sensor
SBFH - Seat module, passenger-side rear
SBSL - Satellite, B-pillar left
SBSR - Satellite, B-pillar right
SBT - Tech reference information
SCA - Soft Close Automatic/Actuator
SD - Sliding roof
SD - Silencer/ muffler
SE - Special Equipment
SES - voice recognition System
SFAH - Seat module, driver's side rear
SFZ - Satellite, vehicle center
SG - Control unit
SGS - Seat integrated belt System
SHD - Sliding/ lifting roof
SHD - Sunroof module (also SHDM)
SI - Service Information
SIA - Service Interval system (ver. I, II, III, IV, etc.)
SII - Service Interval Indicator
SIM - Safety Information Module
SINE - Siren/tilt sensor
SKD - Steel sliding roof
SKHD - Steel sliding/ lifting roof
SM - Seat Module
SM/SPM - Seat/Mirror Memory
SMBF - Seat Module, passenger side
SMFA - Seat Module, driver's side
SMG - Sequential Manual Gearbox
SP - Schematic
SRA - headlight/fog light cleaning
SRS - Supplementary Restraint System
SSD - Steel sliding roof
SSH - Seat Satellite, rear seat
ST - connector views
Steptronic - transmission shift control
STVL - Satellite, left front door
STVR - Satellite, right front door
SVS - Speech processing System
SWR - Headlamp cleaning system
SWZ - Special tool listings
SZL - Switch centre, steering column
SZM - Central switch centre Module
TAGE - Door handle Electronics
TCM - Transmission Control Module
TD - Engine speed signal (ignition pulse)
TD - Technical Data (in TIS)
TE - Fuel evaporation control
TEL - Telephone control unit
TEV - Evaporative purge control
THZ - Tandem master cylinder
ti - Injector "on" Time (duration)
TIS - Technical Information System
TL - Part throttle / load signal
TLEV - Transitional Low Emission Vehicle
TMBFT - Door Module, passenger side
TMBFTH - Door Module, passenger side rear
TMFAT - Door Module, driver's side
TMFATH - Door Module, driver's side rear
TP - Tandem Pump
TPS - Throttle Position Switch/Sensor
TR - Engine speed signal (rpm)
TR - Transistor
TRG - fuel level sensor
TRI - Technical Reference Information (also SBT)
TRS - Battery isolation Switch
TSD - Torsion vibration dampener
TSB - Technical Service Bulletin
TSH - Door lock Heating
TSZI - Transistorized coil Ignition system
TU - Technical Update
TXD - Transmitting Diagnosis line
U-batt - Battery voltage
U-vers - Supply voltage
UERSS - Rollover bar
URS - Rollover protection System
USIS - Ultrasonic passenger compartment Sensor
V - "front"
V - Vehicle road speed
VA - Front Axel
VAT - Front axel support
VANOS - Variable camshaft timing
VEP - Distributor-type injection Pup

VID - Video module
VL - Full load (wide open throttle)
WBG – Hazard warning switch
WIM - Wiper control Module
WK - Torque converter lock-up clutch
WSS – Wind Shield
ZAB - Ignition fade-out (reduction)
ZAE - Central Airbag Electronics
ZAS - Ignition starter switch
ZGM - Central Gateway Module
ZK - Cylinder head
ZKE - Central body Electronics
ZKH - Cylinder head cover
ZMS - Dual-Mass flywheel
ZV - Central locking system
ZS - Central lock
ZSD - Center muffler
ZV - Central locking system
ZVM - Central locking Module
ZWD - Idle control valve

# APPENDIX A: No Communication

**Possible causes in case that the module is not responding:**

► **The Control Unit Not Build In (The vehicle is not equipped with this control unit)**

► **Control Unit Power Supply:**

**- Verify for: Low battery voltage**

**- Verify if the diagnostic cable is properly connected to the diagnostic socket and to the computer port.**

**- Bad power or ground circuits on the diagnostic socket**

► **Wrong Communication port setting from the computer**

## APPENDIX B: Contact Info:

### ► Website:

www.carsoftinternational.com


### ► Email:

bmwhome@carsoftsales.com

### ► Phone:

**+32 19 54 54 29**

### ► …or contact your local Carsoft distributor

# APPENDIX C: Oxford RS 232 - PCMCIA Card


A) Installing the controller card into the notebook

1. Insert the controller card into an empty PCMCIA slot. As the card supports Hot Plug function, it could be inserted into the PCMCIA slot while notebook is in power on or power off condition.
2. When the card is detected, the OS will ask for the software driver.

B) Installing Windows driver for the controller card

1. Once Windows is running, a new controller card is detected.
2. Insert the Drivers & Utility Cd into the CD-ROM, assume drive D
3. When the system ask for the driver for CF Gen, choose "Install from a list or specific location (Advanced)"
4. Choose "Don't search. I will choose the driver to install"
5. Choose "Ports (COM & LPT)"
6. Click on "Have Disk"
7 Browse to the following directory on the CD Driver: D\Oxford\OX95x\Windows
8. Choose "OxSER.INF"
9. Select "PCcard OX16CF950"
10. Follow the on screen instructions until the driver is totally installed

C) Checking the status of the installed driver

1. Right click on the icon of My Computer and choose Properties
2. Choose Device Manager
4. Let click on the "+" sign of the Ports (COM & LPT)
4. The following devices should be shown PCcard OX16CF950
5. Right click on the device above and choose Properties
6. Check the Device Status in the General window. The following should be shown:
   This Device is Working Properly

Changing COM Port number:

Some serial devices need a special COM port in order to work. If your serial device works properly, do not change this setting.

1. From the Device manager Window double click Ports (COM & LPT), then double click the Profilic USB-to Serial Comm Port … you want to change.
2. Click port Settings tab and click Advanced …
3. Click the down arrow that is next to the COM Port Number box, select a COM port that us not in use, then click OK.
4. Click OK, then close Device Manager to save the changes.

# APPENDIX D: APIOTEK RS232 - Express Card


Windows XP/Windows 2000 Installation

1. Don't insert the Express Card into the Express Card Slot.
2. Insert the CD into the CD-ROM Drive.
3. At the Windows desktop click Start, then RUN.
4. Type D:\EC-0008(Serial port)\WIN98SE&ME&2K&2003\Setup.exe
5. Follow the on-screen instructions to complete the installation.
6. Insert the Serial Express Card into the Express card slot.
7. Open 'Device Manager" under System Properties and check if there is the device you install under "Profilic USB-to-Serial-Comm Port …"
8. Now the Serial Express Card is ready to use.

Windows Vista Installation

1. Don't insert the Express Card into the Express Card Slot.
2. Insert the CD into the CD-ROM Drive.
3. At the Windows desktop click Start, then RUN.
4. Type D:\EC-0008(Serial port)\VISTA\Setup.exe
5. Follow the on-screen instructions to complete the installation.
6. Insert the Serial Express Card into the Express card slot.
7. Open 'Device Manager" under System Properties and check if there is the device you install under "Profilic USB-to-Serial-Comm Port …"
8. Now the Serial Express Card is ready to use.

Changing COM Port number:

Some serial devices need a special COM port in order to work. If your serial device works properly, do not change this setting.

1. From the Device manager Window double click Ports (COM & LPT), and then double click the Profilic USB-to Serial Com Port … you want to change.
2. Click port Settings tab and click Advanced …
3. Click the down arrow that is next to the COM Port Number box, select a COM port that us not in use, then click OK.
4. Click OK and then close Device Manager to save the changes.