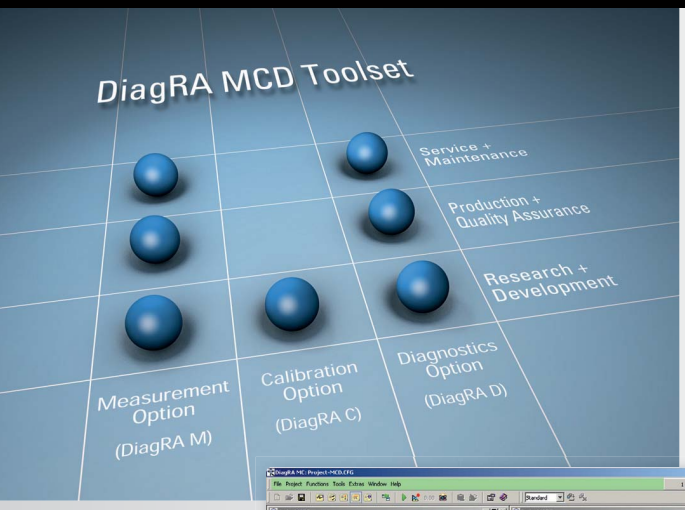
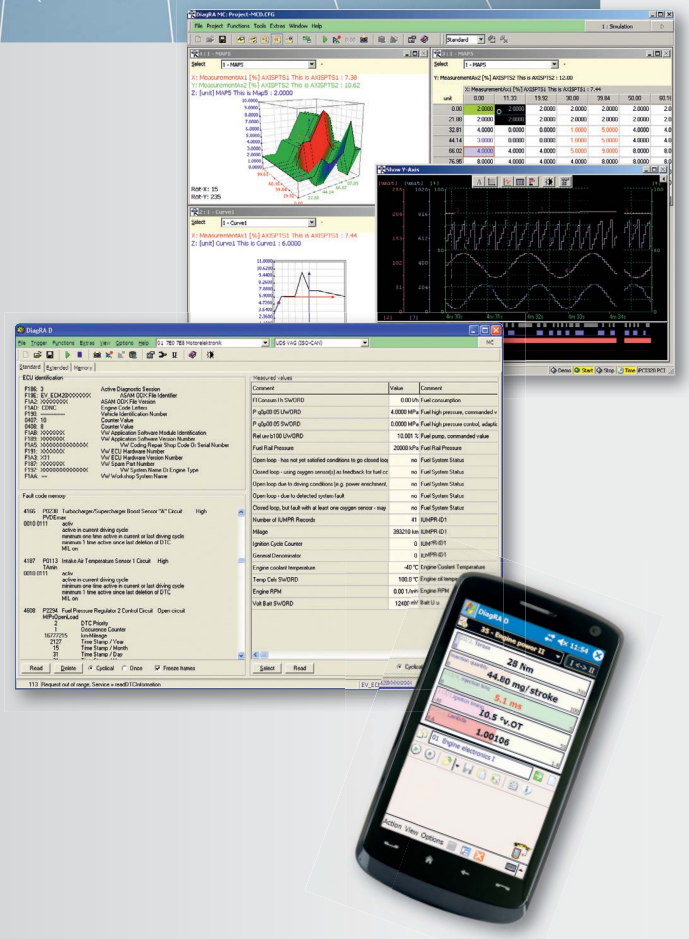
DiagRA MCD Toolset

Measurement • Calibration • Diagnostics

Simplified licensing model, low entrance with incremental upgrade options, fair prices





Features

- Superior tools in an integrated package
- Support of CAN, K-Line, FlexRay, SMB and Ethernet
- Various platforms
- Mobile, easy to use
- Minimum hardware requirements
- Standards: CCP, XCP, MCD-2, ODX, CANdb, MDF, DCM

DiagRA M

- Powerful measurement
- Measurement data acquisition from ECUs and devices on CAN, SMB and Ethernet
- Online measurement and visualisation
- Offline data processing

DiagRA C

- Mobile ECU calibration
- Graphical and tabular display of characteristic curves and fields
- Ergonomic characteristic field editor
- Editor for structured parameter adjustment of the fault path manager

DiagRA D

- ECU diagnostics on K-Line, CAN and FlexRay
- Workshop tester
- OBDII/EOBD/HD-OBD Scan-Tool according to SAE J1979, SAE J1939 and ISO 27145 WWH-OBD regulations
- Advanced developer functionalities
- Flash programming

RA CONSULTING

RA CONSULTING GmbH
Zeiloch 6a · D-76646 Bruchsal
Tel. +49 (0) 7251 3862-0
Fax. +49 (0) 7251 3862-11
E-Mail info@rac.de

www.rac.de

DiagRA MCD Toolset

Measurement • Calibration • Diagnostics

The **DiagRA MCD Toolset** is an applications and diagnostics tool-box for electronic control units in the automotive industry. It comprises of a set of three software options: **DiagRA M**, **DiagRA C** and **DiagRA D**. These three options can either be run independently or, when all three are installed, executed in an integrated and optimised environment. In this way it is possible to acquire and display diagnostic measurement values graphically using **DiagRA M** and, simultaneously, to calibrate with **DiagRA C**. Where technically possible, the same interface hardware is used.

DiagRA M

Measurement option

DiagRA M can acquire a vehicle's state variables from a control unit or other measurement devices. The results are then displayed on-line both graphically and numerically. Acquisition options are CAN, the serial measuring bus (SMB), and XCP on Ethernet. CAN DBC or equivalent A2L files are used to define the values and, additionally, a parser, conformant to the ASAM MCD-2-MC specification, is provided for interpretation of the control unit description files. Using the diagnostic option **DiagRA D**, several diagnostics measurement values can be read out, displayed numerically and graphically, and recorded.

DiagRA M offers a powerful, flexible, adaptable and storable user interface configuration. Measurements can be automated using suitable trigger conditions, which can be combined over multiple measurement channels. Acquired data can be saved and processed immediately via the integrated evaluation function. **DiagRA M** supports cold-start measurements and the transmission of CAN messages for specific unit testing.

Data exchange with other applications can take place via MDF (DAT) import and export.

As with the other tools, attention has been paid to particularly simple, intuitive operations and, hence, a requirement-oriented functionality has been achieved.

DiagRA C

Adjustment option

DiagRA C is a CCP (CAN Calibration Protocol) calibration tool whose functionality and operation is precisely tailored to the needs of the applications engineers and control unit developers. The user interface can be parameterised and the configurations can be stored. Hence, repeatable and comparable sequences are possible.

Characteristic curves and fields can be displayed both graphically and numerically. The ergonomic characteristic field editor offers a Copy and Paste function and a histogram function in text mode.

With **DiagRA C**, adjustments can be made on-line. The adjustment data can be printed out, compared and merged. The exchange of adjustment data by DCM is supported.

Particularly worth mentioning is a calibration option which avoids the need of an emulator for application tasks. CCP support can be achieved with simple, low-cost CAN interfaces, so that many applications engineers' tasks can be achieved with minimal cost outlay. In particular, it is possible to set up a complex application environment using inter-operation with the other members of the **DiagRA MCD Toolset**.

The standard RA software **Codes** for the processing of control unit data have already been integrated into **DiagRA C**. The **DiagRA C** option thus offers a clearly-laid-out editor for the structured paramaterising of the error-path managers from different control unit manufacturers.

DiagRA D

Diagnostics option

DiagRA D already provides more than 10000 users the three essential components of OBDII/EOBD/HD-OBD Scan-Tool, Workshop Tester, and Extended Functionality for developers. With the extended functions, this simple-to-operate tool enables the developer to fully read out the error memories of control units via the descriptions from A2L files.

All 10 functions (service $01 to service $0A) according to SAE J1979 and the diagnostic messages according to SAE J1939 (HD-OBD) are supported in the Scan-Tool section. New is the support of WWH-OBD (World-Wide Harmonized OBD regulations.

DiagRA D supports various diagnostic protocols on K-Line, CAN and FlexRay, e.g. ISO14230 (KWP2000), ISO15765, ISO14229 (UDS), SAE J1939 as well as GM-LAN. Diagnostic descriptions according to the ODX specification are supported.

Data access can be initiated by hand, triggered using preconfigured measurements or acquired as a recording for subsequent use. The data can also be saved in TXT or structured XML format. The structured storage option permits simplified data transfer into a database, or another application, for data processing.

A new, user-friendly test cycle assistant for standard (FTP75, NEFZ) or self-defined driving cycles is integrated. The reference value can be freely selected from the acquired diagnostic values.

There are automation options via DDE and ASAP-3 interfaces as well as via the so-called Web services (in accordance to the ASAM HIL API definitions) for connecting to a test stand or simulator.

CAN messages can be acquired and transmitted with or without diagnostic communication. For this purpose the user only requires the DBC descriptive files.

An option for flash programming using KWP2000 (K-Line, CAN TP2.0 and ISO-CAN), UDS (ISO-CAN) or UDS (FlexRay) is also available. As data source SGM and ODX containers as well as HEX/S19/BIN/MOT files can be used. Partial flash programming is possible.

Two new optional plugins for script programming and execution as well as for logfile data analysis and value replay open additional fields of application.

Based on an Open-Source(GPL)-DOS tool (the only one accepted by the SAE), a Windows wrapper for the SAE J1699-3 OBDII Compliance Test Cases is implemented in DiagRA D. A results evaluation tool for the J1699-3 logfiles is included; results are saved in XML or PDF files.

Users of our software products include the car manufacturers Audi, BMW, Daimler, Ferrari, Fiat, Ford, Lamborghini, Opel, and The Volkswagen Group as well as many or their suppliers.

Note: The use of the DiagRA MCD Toolset is only possible with special software licence keys that are available at RA Consulting. Several program parts like the workshop tester, the expanded functions and the flash programming option will be only delivered to user groups defined by RA Consulting.
Because the J1699-3 function is based on an Open-Source-Tool we cannot guarantee the permanent provision. We try for support and adaption as long as it is economically justifiable and technically reasonable.

RA CONSULTING

RA CONSULTING GmbH
Zeiloch 6a · D-76646 Bruchsal
Tel. +49 (0) 7251 3862-0
Fax. +49 (0) 7251 3862-11
E-Mail info@rac.de
www.rac.de

Rev. IX/10