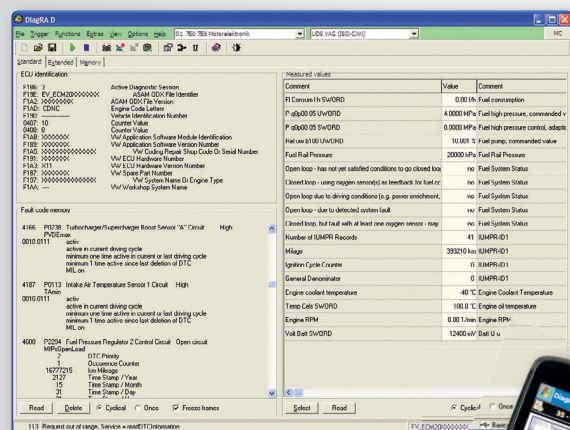
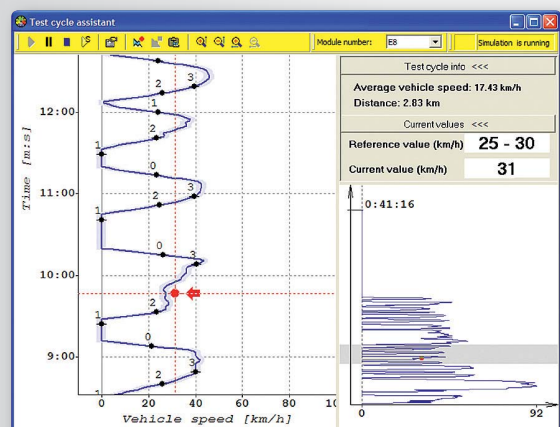
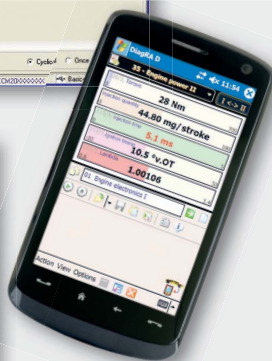


DiagRA D

Diagnostics option from the DiagRA MCD Toolset

Features:

- Scan-Tool, workshop tester and advanced developer functions
- K-Line, CAN and FlexRay
- Support of all common diagnostic protocols
- ODX support
- OBDII/EOBD/HD-OBD Scan-Tool in compliance with SAE J1979 and SAE J1939
- ISO 27145 WWH-OBD (World Wide Harmonized - Onboard Diagnostics) supported
- Convenient functions to save data and to record values
- XML output of data for further processing
- Optional plug-in for flash programming
- Automation via ASAP-3, DDE and Web services interfaces
- Measurement value output via D/A converter RADIO
- Raw CAN messages can be read and transmitted

Benefits:

- Clear ECU diagnostics for developers
- ECU communication without complex hardware requirements
- Simple, intuitive handling
- Extensive context sensitive help
- Interaction with DiagRA M and DiagRA C for measurement and calibration

DiagRA MCD Toolset

The DiagRA MCD Toolset is an applications and diagnostics tool-box for electronic control units in the automotive industry. It consists of the three integrated options: DiagRA M, DiagRA C and DiagRA D. Each option can also be run separately.



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Diagnostics with DiagRA D

The diagnostics option from DiagRA MCD Toolset

DiagRA D is used by more than 8000 users world wide as a complete, intuitive to operate and particularly clear diagnostics tool. RA Consulting's previous tool, **DiagRA**, has been integrated into the **DiagRA MCD Toolset** by means of extended functionality and features that are necessary for interoperation with **DiagRA M** (measurement option) and **DiagRA C** (calibration option).

The functional range can be subdivided into [three basic sections](#):

1. Workshop diagnostics
2. Scan-Tool for OBDII/EOBD/HD-OBD diagnostics
3. advanced developer functions

The [workshop diagnostics function](#) is a customer-specific part of the program, which is adapted for different vehicle manufacturers. The functionality can be used for all ECUs inside the vehicle. The user simply selects the diagnostics protocol and bus system used by the ECU. Depending on the vehicle type various diagnostics functions are available.

The [Scan-Tool function](#) is implemented in compliance with SAE J1979 (OBDII/EOBD) and SAE J1939 (HD-OBD). The SAE J1979 scan tool function supports all 10 services (Service \$01-Service \$0A) defined by the authorities as well as all the sub-functions (PIDs). The SAE J1939 scan tool function supports the required diagnostic messages and parameter groups. Results from all the OBD related control units will be displayed automatically. Additionally, a table of all supported services and sub-functions can be displayed.

New: WWH-OBD (World Wide Harmonized - Onboard Diagnostics) support in accordance with ISO 27145 is also part of this functional group. The goal of the standard WWH-OBD is to replace the regional standards of vehicle onboard diagnostics with a global standard.

The [advanced developer functions](#) are designed for development engineers. With these functions it is possible to read out and display the internal fault memory in full, display the status of the diagnostics functions, read out RAM cells, adaptation ID fields etc. For this a control device description file in DAM or A2L format is required. Special adaptations of display masks (e.g. for IUMPR/ratio values) are available for engine control units from Robert Bosch GmbH up to Motronic EDC/MED 17 and for Continental's SIMOS. Customisations for other ECU manufacturers are possible at any-time and have been carried out repeatedly.

Further program functions:

- Automatic and manual measurement with adjustable parameters
- Storage of data in different formats e.g. TXT, XML and Excel compatible CSV files for recordings
- 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.
- Option for flash programming using KWP2000 (K-Line, CAN TP2.0 and ISO-CAN), UDS (ISO-CAN) and UDS (FlexRay). As data source SGM and ODX containers as well as HEX/S19/BIN/MOT files can be used. Partial flash programming and flash programming via DDE and Web services remote control is possible.
- Two new optional plugins for script programming and execution as well as for logfile data analysis and value playback.
- Display and transmission of raw CAN messages, described in DBC and UEF files
- Parameterisable import module for ODX project description files with automatic placement into a project hierarchy
- Driver control station functionality for driving after standard (e.g. FTP75, NEFZ) or self-defined driving cycles with use of freely selectable values acquired via a diagnostic session.
- Available in German, English, French, Polish, Spanish, Italian, Czech and Hungarian language

Technical Data:

- **DiagRA D** for Windows NT SP6/2000 SP4/XP/Vista/Win7 (32/64bit)
- Support of various diagnostic protocols on K-Line, CAN and FlexRay, e.g. ISO14230 (KWP2000), ISO15765, ISO14229 (UDS) as well as GMLAN
- K-Line diagnostics with simple level converter cable on RS232 or USB port
- Support of multiple CAN und multi-bus interface devices
 - I+ME Actia XS family
 - Vector CANcard X/XL, and CANcase XL, ETAS CAN-link I/II
 - Kvaser CAN adapter series
 - PassThru devices according to SAE J2534 (v0202 and v0404)
 - Devices according to RP1210 API for SAE J1939 protocol
 - Support of interfaces with D-PDU-API after ISO 22900-2
 - Siemens BlueVCI
 - IXXAT CAN interface devices
- FlexCard Cyclone II SE support for FlexRay bus access
- Output of measurement values as normalised analogue signals via our new D/A converter **Radio**

Acquired diagnostic measurement values can be processed with the measurement option **DiagRA M** graphically and numerically. The data can be exported as CSV, TXT or MDF/DAT files.

DiagRA D will be delivered with an Open-Source(GPL) DOS tool for the conversion of the test sequences for the SAE J1699-3 OBDII Compliance Test Cases. The user is supported with:

- graphical user interface for inputs and outputs
- translation of the J1699-3 instructions into several languages (currently available: English, German)
- log file viewer with structural overview and search function
- log file formatter for complex analysis of the logfiles and output into XML files. These can be used for presentations in a browser or to generate a PDF file. PDF files contain results of the analysis as well as the original log file content.

The Open Source Tool is permitted by the SAE as the only accepted tool and is maintained on behalf of SAE. The SAE J1699-3 expansion module is available free as an additional function in accordance with the regulations for the use of Open Source Software. On the basis of this combination, we cannot guarantee the long-term availability of this function. We will however maintain and adapt this module as long as is economically justifiable and technologically meaningful.

The use of **DiagRA D** is only possible with a special software license key, generated by RA Consulting.

Workshop diagnostics function, advanced developer functions and flash option are only delivered to user groups defined by RA Consulting. A variant **DiagRA D for Windows CE** is also available. It comes with the full functional range of workshop diagnostics and with reduced range of Scan-Tool and developer functions. It has no interconnectivity with other tools of the **DiagRA MCD Toolset**. The Scan-Tool function is available as a separate tool with the name **Silver Scan-Tool**.