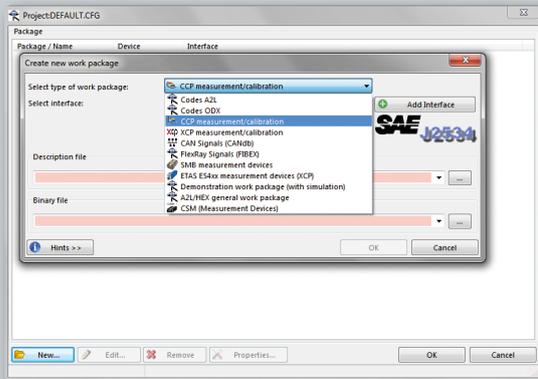
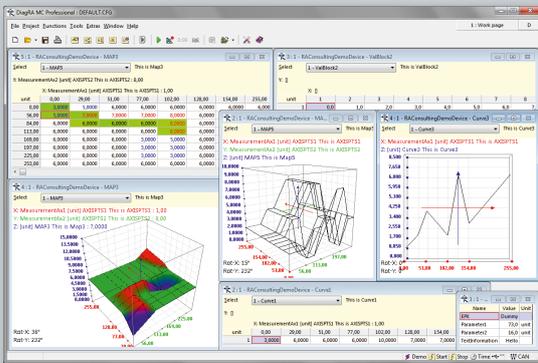
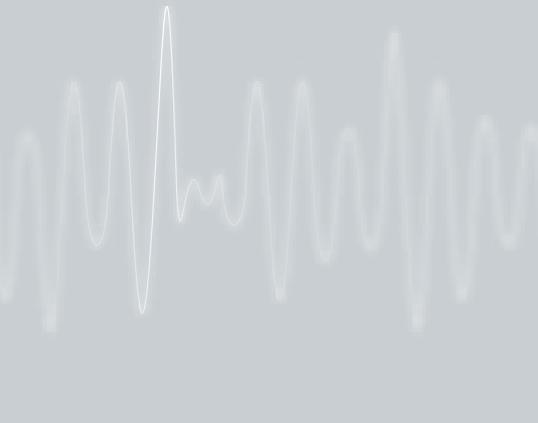
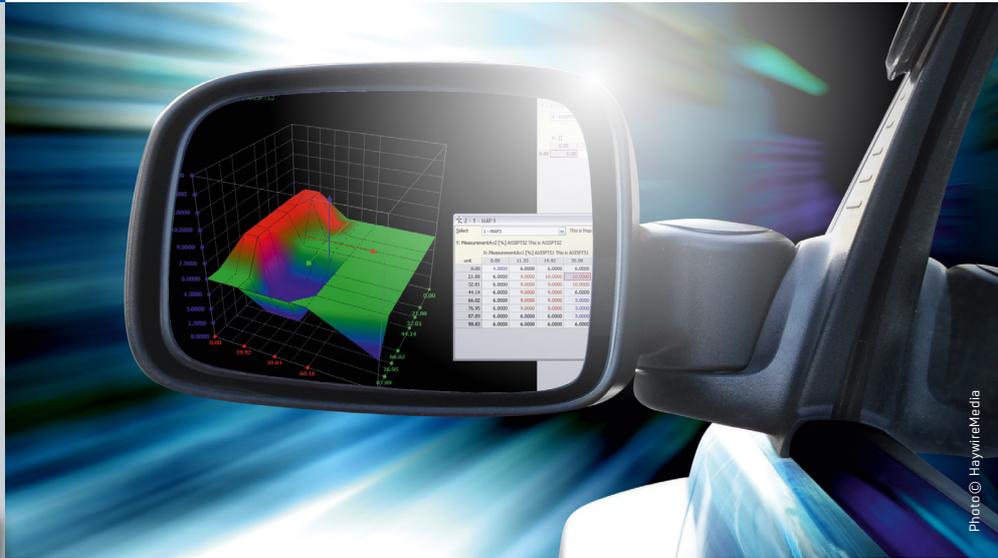


RA[®] Automotive Products



Diagra[®] C

Calibration option from the DiagRA[®] MCD Toolset

Features:

- Mobile control unit calibration
- Calibration on CAN via CCP/XCP
- Calibration on FlexRay and UDP via XCP
- Graphical and numerical display of characteristic curves and maps
- Ergonomic characteristic maps editor
- Listing, comparing and merging of adjustment data
- Editor for structured parameter adjustment of the fault path manager
- Online/offline calibration
- Protocols and file formats: CCP, XCP, MCD-2 MC ASAP2/A2L, DCM

Benefits:

- Powerful, flexible, adaptable and storable user interface
- Minimal hardware requirements
- Clear, intuitive operation
- Quick and simple configuration
- Interaction with DiagRA[®] M and DiagRA[®] D for measurement and diagnostics

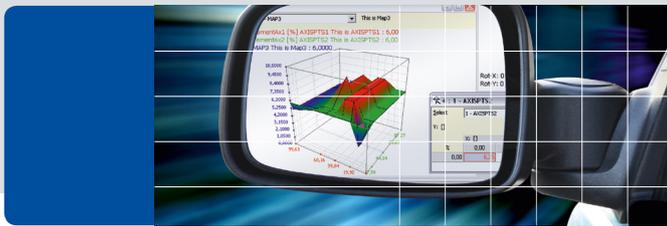
Diagra[®] MCD Toolset
 The DiagRA[®] MCD Toolset is a calibration and diagnostics tool box for electronic control units used in automobiles. It comprises the three software options DiagRA[®] M, DiagRA[®] C and DiagRA[®] D which can also be run separately.

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Our software products are used by more than 300 leading carmakers and suppliers worldwide.



Calibration with DiagRA® C

The calibration option from DiagRA® MCD Toolset

DiagRA® C is a tool for the setting of control unit parameters. This is either done online using the CAN calibration protocol (CCP) or the Universal Measurement and Calibration Protocol (XCP on FlexRay, CAN and UDP) or offline using binary files. Operation is simple, quick and intuitive, and the functionality is exactly tailored to the needs of automotive applications engineers. In combination with the other options from the DiagRA® MCD Toolset, complex yet cost-efficient application environments can be assembled. RA Consulting's standard software Codes has been integrated as an editor for the structured parameterization of the error-paths for different control unit manufacturers.

1 Low cost

- No emulator needed
- Minimal hardware requirements
- Existing hardware can be used
- Simple installation
- Minimal familiarization time
- Minimal set-up times
- Quick and simple configuration
- Data exchange with existing calibration systems

2 Mobility

- Notebook as calibration computer
- Calibration directly in the vehicle

3 Task suitability

- Clear system layout
- Intuitive operation
- Configurable user interface
- Flexible window handling

- Quick user interface adaptation and configuration
- The configuration can be stored – allowing the functional sequences to be repeated and compared
- Graphical and tabular processing of characteristic curves and maps
- Ergonomic characteristic maps editor with copy-and-paste function for maps and to MS Excel, histogram function for operating point in text mode, 20-fold undo function
- Standard data exchange format DCM allows use of data from other systems, e.g. INCA (product of ETAS GmbH)

4 Functionality

- Online and offline processing of data sets
- Listing, comparing and merging of adjustment data
- Control unit version administration (compatibility testing)
- Sending of user defined CAN frames
- Switching between working and reference page
- Convert existing project configurations to different ECU software revisions

5 Standards

- CCP conformity
- XCP conformity (XCP on FlexRay, XCP on CAN, XCP on UDP)
- DCM for data exchange

6 Hardware support for CAN interface devices

Support of multiple communication hardware interfaces:

- multi-bus interface devices from many 3rd party manufacturers
- PassThru devices according to SAE J2534 (v0202 and v0404)
- Support of interfaces with MVCI D-PDU-API according to ISO 22900-2

7 System requirements

- Windows Win7(32/64bit), Win 8.1
- Suitable connectivity for interface hardware

Codes

Codes is a functionality designed for the application of structured information in ECUs, such as the Diagnostics Error path manager (DEPM, Dynamic error management, Fault Management), statistic functions or the long coding. Codes supports the error path managers of various manufacturers.

Error diagnostics functions are built into each electronic control unit. The data to be analyzed and stored from the diagnostics functions is partly defined by legislation (CARB, EOBD), and partly manufacturer-specific. The common fac-

tor is that a core module (DEPM) exists, which has to be parameterized dependent on the vehicle and control unit. This parameterization takes place via value blocks, characteristic fields, characteristic curves or also individual constants in the memory of the control unit.

The logically connected labels and value blocks necessary for the parameterization of DEPM are generally spread over the address fields of the control unit. The values are frequently coded in a form not intuitive to the application engineer (special significance of individual bits, bit

fields with activated or deactivated error paths etc.). Accordingly, correct parameterization or even a comparison of different projects is extremely difficult.

Codes supports the application engineer when parameterizing DEPM. For this purpose, the software reads input data from a description file, analyses it, and provides this information in a structured and logical way. This is achieved by reading additional information from external files (e.g. to display error codes in plain text). Extensive search and filter functions help find particu-

lar labels or values. Different control unit program versions can be compared and the data can be listed-out in several formats.

Codes allows the user to open ODX projects and, in particular, compare the included data actually applied in the A2L/HEX projects. Accordingly, Codes facilitates the analysis of labels and label contents of specification and current-state data. Modifications can be stored in binary files or set online.

Note: The use of DiagRA® C is only possible with a special software license key, generated by RA Consulting.

