

Diagnostics tool for ecu.test

With the diagnostics tool for **ecu.test** it is possible to use symbolic vehicle diagnostic functions automatically without additional software. Deeper protocol knowledge is not required. **ecu.test** executes the diagnostic session handling (UDS) automatically. Diagnostic access can be realized via the following hardware-related bus connections:

- CAN(-FD) e.g. with Vector-XL, PassThru-API (SAE J2534), ETAS-BOA, Peak, Xoraya, etc.
- FlexRay e.g. with Vector-XL Hardware, Technica BTS
- Ethernet via TCP/IP network connection (DoIP)

If you are interested in the add-on, please contact sales@tracetronic.de.

The screenshot displays the 'Read fault memory' configuration window within the ecu.test diagnostics tool. The interface is divided into several sections:

- Workspace:** A tree view on the left shows the project structure, including 'Engine' and 'Fault Memory'.
- References:** A section at the top right of the window showing the 'Mapping name' as 'Engine/Fault_Memory' and the 'DIAG read fault memory' function.
- Request:** A section for configuring the diagnostic request, including 'Subfunction' (ReportDTCByStatusMask (0x02)) and 'Status mask' (0x8F).
- Evaluation:** A section for configuring the evaluation of the diagnostic response, including 'Comparison' and 'Time options' tabs.
- Check DTCs:** A section for configuring the check of Diagnostic Trouble Codes (DTCs), with options for 'Expected' and 'Not expected'.
- Tolerate DTCs:** A section for configuring the tolerance of DTCs, with an option for 'All others'.

The 'From List' field is visible at the bottom of the 'Check DTCs' and 'Tolerate DTCs' sections.

Key features at a glance

Symbolic Access

Read fault memory entries

- Is performed using an intuitively usable test step
- Allows a simple formulation of the expectation for Diagnostic Trouble Codes (DTCs)
- DTCs Diagnostic Trouble Codes can be specified via different representations:
 - OBD DTC Definitions (PCBU-Code)
 - DTC Name/ Description
 - DTC Number
- Clear presentation of DTC information in the test report
- Supported subfunctions:
 - ReportDTCByStatusMask (\$02)
 - ReportDTCSnapshotRecord-ByDTCNumber (\$04)
 - ReportSupportedDTCs (\$0A)
 - ReportFirstTestFailedDTC (\$0B)
 - ReportFirstConfirmedDTC (\$0C)
 - ReportMostRecentTestFailedDTC (\$0D)
 - ReportMostRecentConfirmedDTC (\$0E)
 - ReportMirrorMemoryDTCByStatusMask (\$0F)
 - ReportEmissionsOBDDTCByStatusMask (\$13)
 - ReportDTCWithPermanentStatus (\$15)

Read and write

Data Identifier (DID)

- Clear presentation of DIDs in the diagnostic tab
- Access to any complex data structures (structures, arrays, scalars) via intuitive auto completion
- Simple status change/query via mapping test steps

Override Input and Output Values (Input/Output Control)

- Call shortTermAdjustment, freezeCurrentState, resetToDefault and returnControlToECU for the corresponding DID
- Support for parameterization and expected value specification

Calling of Routines (Routine Control)

- Starting, stopping and querying diagnostic routines
- Support for parameterization and expected value specification of routine calls

If ODX files are used as the basis for symbolic diagnostics, further diagnostic services may be available, such as WriteMemoryByAddress, Authentication or SecurityAccess.

If you have any questions, please contact ecu.test.support.

Job access for additional UDS functions

Diagnostic and Communications Management

- Diagnostic Session Control (\$10)
- ECU Reset (\$11)
- Security Access (\$27)
- Tester Present (\$3E)

Data Transmission

- Read Data By Identifier (\$22)
- Read Memory By Address (\$23)
- Write Data By Identifier (\$2E)
- Write Memory By Address (\$3D)

Stored Data Transmission

- Clear Diagnostic Information (\$14)
- Read DTC Information (\$19)

Input/Output Control

- Input/Output Control By Identifier (\$2F)

Remote Activation of Routine

- Routine Control (\$31)

Other

- Negative Response (\$7F)

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Communication jobs with transport protocol

- Send
- Receive
- StandardPGNRequestResponse

Diagnostic jobs

- DTCRequest (DM1 und DM2)
- ClearDTC (DM3)
- MemoryAccess (DM14, DM15, DM16)

Support for the analysis of J1939 ASC bus recordings.

Supported formats and Standards

Protocols:

- DoIP (ISO 13400)
- DoSoAd (Diagnostics over AUTOSAR Socket Adaptor)
- FlexRay TP (AUTOSAR FrTp, ISO 10681-2)
- ISO-TP (ISO 15765-2)
- KWP2000 (ISO 14230)
- OBD DTC Definitions (ISO 15031-6 / SAE J2012)
- SAE J1939
- UDS (ISO 14229-1)

Diagnostic descriptions:

- CANdela Diagnostic Data 6.5 to 9.1 (CDD)
- Global Diagnostic Data Export 4.1 (GDx)
- Multiplex Diagnostic Data Exchange Format 4.1 und 5.0 (MDX)
- Open Diagnostic Data Exchange Format 2.2.0 (ODX)
- Packaged ODX Data 2.2.0 (PDX)

Coming Soon

- OBD (ISO 15031-5 / SAE J1979)