

ECU DIAGNOSTICS

Simulating several ECUs with one device

The Testcube2 from Softing (Germany) is a configurable hardware and software solution for simulating ECU diagnostics with real bus communication. This unit can simulate several ECUs or even an entire vehicle at the same time.

CREATING TEST SEQUENCES CAN BE CHALLENGING along the entire chain of process because the Electronic Control Unit (ECU), which is required as a testing counterpart, is missing. This begins with the development tester and continues - via manufacturing systems - right through to after-sales services. For example, software updates at regular intervals ensure that workshop testers are assigned all latest functions.

A suitable counterpart is required in order to execute automated regression "tester tests". The ECUs must be available in entirety and in all variants to be able to ensure sufficient test coverage. As this is usually impossible, a simulation is the required solution.

Whereas previously the various ECUs had to be toggled in a time-consuming manual procedure or with complex electronics, now all the user has to do is reshuffle the simulation files. The user can take care of this manually using the intuitively operable graphic user interface or in test automation with the DLL interface. The ECU simulator Testcube2 is suitable for applications in which an ECU is not yet (e.g. preparation of workshop tests) or no longer (e.g. tester regression test) available. After the automatic import of a CANdb file and editing at symbolic level, residual bus simulation can be set up.



The product features Windows XP 32-bit, Windows 7 32-bit, and Windows 7 64-bit as operating systems (Photo: Softing)

The product can be used for the following tester regression tests. Creating a trace: with an existing tester, diagnostic sequences are run on the vehicle or lab equipment and the CAN network communication recorded. Also it can be used for generating a simulation: the application automatically parses the CAN trace for diagnostic messages and assigns these to the vehicle ECUs. Timing can also be simulated if required - as can "Response Pending" responses of the ECU. Editing a simulation: if required, the simulation can be extended manually. Complex sequences can be realized with C commands. In cases in which the simulation does not have to be reloaded, it can be stored permanently on the device and can thus run even without a connected PC.

The product features two CAN interfaces, three analog inputs and three digital inputs/outputs and is available with various protocols, such as J1939. It comes in a housing measuring 143 mm x 113 mm x 84 mm, and a 32-bit embedded controller with Power-PC core 384 MHz. Its supply voltage is from 8 V to 28 V.