The new DS1521 variants of the MicroAutoBox III offer a wealth of connection options from CAN FD, Automotive Ethernet, and LIN to FlexRay, analog inputs, and digital inputs/outputs.

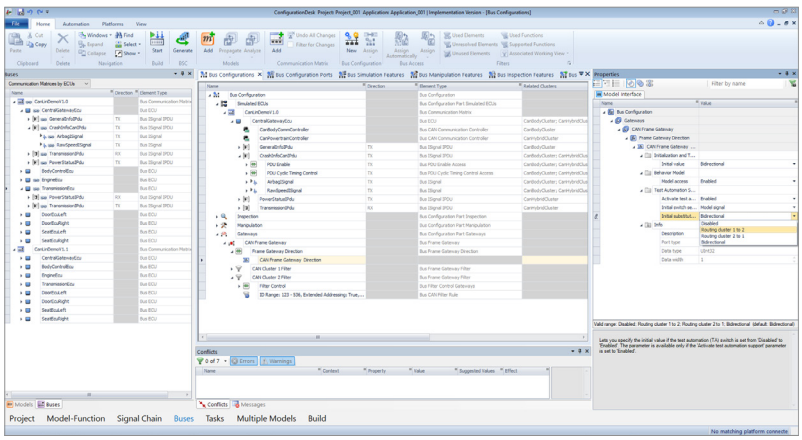
Perfectly Connected

New MicroAutoBox III variants with DS1521 Bus and Network Board

Additional variants of the new MicroAutoBox III with an even wider range of bus and network interfaces make the product range even broader and stronger. A new DS1521 Bus and Network Board integrated in the MicroAutoBox III provides an exceptional range of channels in the familiar small MicroAutoBox form factor.

With the release of the MicroAutoBox III, which offers the highest all-round power for numerous applications from autonomous driving to zero emissions, compact, in-vehicle dSPACE prototyping systems reach an entirely new level of performance. This is achieved, for example, by the significantly higher computing power and improved monitoring mechanisms for functional safety.

The MicroAutoBox III offers four processor cores and is up to 16 times faster per processor core than its predecessor, the MicroAutoBox II. Moreover, additional MicroAutoBox III variants with the new DS1521 Bus and Network Board will also be available. With their impressive range of channels, the new variants are particularly suitable for applications such as intelligent gateways as well as executing superimposed controllers (supervisory controllers) to control other ECUs in real time via buses and networks. They are also suited for designing central control units with service-based Ethernet communication. To ideally address these applications, the DS1521 Bus and Network Board provides eight CAN FD channels, three automotive Ethernet ports (100/1000BASE-T1), two FlexRay connectors (A/B), three LIN channels, and additional UART, digital, and analog interfaces.



Example: A gateway application in the Bus Manager.

Software for Full Control

To configure the hardware easily and flexibly for each application, the MicroAutoBox III is supported by the tried and proven ConfigurationDesk implementation software known from SCALEXIO, including the seamlessly integrated Bus Manager. This allows for bus communication to be configured clearly and conveniently for gateway or supervisory controller applications, all based on the latest standards and communication descriptions such as AUTOSAR (ARXML), FIBEX, DBC, and LDF. For integration into an existing vehicle electrical system, current AUTOSAR features such as secure onboard communication (SecOC), end-to-end protection, and global time synchronization (GTS) are also supported on all relevant bus systems, including service-based Ethernet communication (SOME-IP). To be able to respond flexibly and at short notice to project-specific adaptations, a comprehensive extension framework is available, which can be integrated and implemented by dSPACE to the customer's specifications with very short

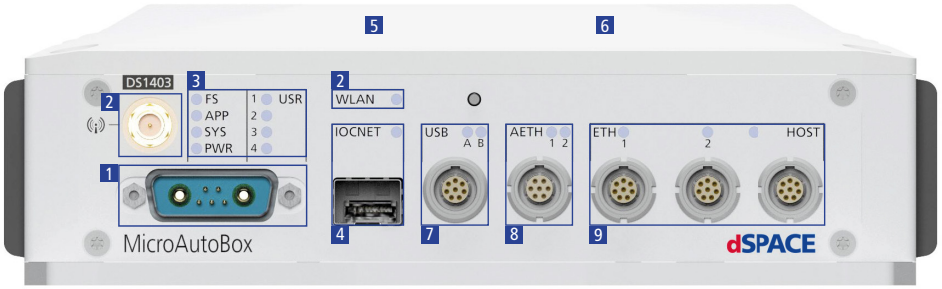
A vast range of channels in the compact MicroAutoBox form factor combined with a comprehensive software tool chain for bus and network communication.

Focus:
Gateway applications and supervisory controllers

Buses and networks are increasingly used to connect the numerous control units, sensors, and actuators in the vehicle. When new functions are developed, this bus and network data often has to be redirected, filtered, or extended by new control components via gateways or domain controllers as central network nodes to new or existing recipients. One example is the integration of a new drive system into an existing vehicle platform.

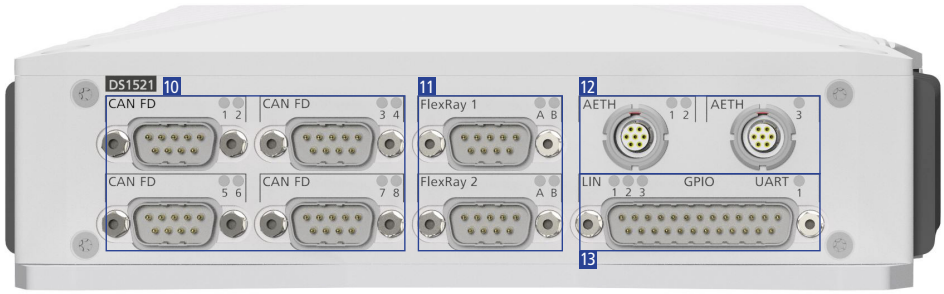
To reduce costs, space requirements,

MicroAutoBox III 1403/1521



DS1403 Processor Board
(connectors at the front panel of the MicroAutoBox III)

1 Battery voltage connection (12/24/48 V onboard power supply)
2 WLAN option
3 Status and user-programmable LEDs
4 IOCNET connector
5 Can be extended by I/O units, e.g., DS1514, DS1521
6 Quad-core ARM® processor
7 USB port (USB 2.0) for mass storage and data logging
8 2 x automotive Ethernet (100/1000 Mbit/s)
9 Ethernet ports (Gigabit Ethernet) for host and other devices



NEW: DS1521 Bus and Network Board
(connectors on the back panel of the MicroAutoBox III) with additional interfaces

10 8 x CAN FD
11 2 x FlexRay (A/B)
12 3 x automotive Ethernet (100/1000 Mbit/s), additional
13 3 x LIN, 1 x UART: RS232 or RS422/485
4 x Analog In, 6 x Digital In/Out

Even the "small" MicroAutoBox 1403/1521 offers a wide range of channels. If this is not sufficient, you can simply double the DS1521 channels – by selecting the MicroAutoBox 1403/1521/1521 – or, depending on your requirements, by choosing one of the many other MicroAutoBox III variants, for example, to increase the number of analog and digital channels.

turnaround times. At run time, variables in the model can be visualized clearly and easily in ControlDesk. For access to the bus and network signals, the Bus Navigator offers the option to create preconfigured layouts for transmit and receive messages. In addition, live bus monitoring and bus analysis can be activated directly while the application is running. The ControlDesk Bus Navigator provides clear and synchronized access to bus and network data with all other used inputs and outputs, eliminating the need to acquire additional dedicated systems (hardware and software) for live monitoring. This significantly saves costs and also simplifies the system design. ■

and system complexity, the required gateway components must ideally already be covered by the function development system used to execute the new control functions in real time. In combination with the dSPACE software tool chain, the MicroAutoBox III development system with the DS1521 Bus and Network Board is ideal for this task. The hardware offers a maximum channel count and maximum computing power with the smallest footprint, while the powerful, proven software guarantees fast development cycles by means of simple configuration.