



# MicroAutoBox III

Next Generation of Compact In-Vehicle Prototyping

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## Compact and robust in-vehicle prototyping system

### Highlights

- High computation power with quad-core ARM® processor
- Comprehensive bus and network support, including CAN, CAN FD, LIN, FlexRay, and (automotive) Ethernet
- Functional safety monitoring features



### Application Areas

The MicroAutoBox III is the next generation of the established MicroAutoBox, a real-time system for performing fast, in-vehicle function prototyping. The powerful system can be added to or replace an electronic control unit, and lets you experience and test control functionalities in a real environment. MicroAutoBox III is ideal for many different rapid control prototyping applications either as a single demonstrator or for equipping entire test fleets, e. g.:

- E-mobility, electrification, and powertrain control
- Assisted, highly automated, and autonomous driving
- Chassis, body, and vehicle dynamics control
- Supervisory and domain control
- Bus/network gateway and monitoring
- Noise, vibration, position, and motion control

### Key Benefits

The MicroAutoBox III uniquely combines high performance, comprehensive automotive I/O including bus and network support, and an extremely compact and robust design – all for a favorable price. The comprehensive software environment lets you configure, program, and operate the system easily and with minimum effort.

### Variants

The MicroAutoBox III is available in different variants, which provide different numbers of analog or digital I/O channels, advanced bus and network interfaces, or even a user-programmable FPGA for very fast control loops as required in e-mobility applications. Furthermore, there are dedicated extensions, e.g., a MicroAutoBox III Embedded PC for ADAS/AD applications or an I/O module for engine control. All this makes the MicroAutoBox III a powerful and flexible development system for nearly all mechatronic in-vehicle applications, from autonomous driving to zero emissions.

- TI AM5K2E04 with four ARM® Cortex®-A15 cores (1.4 GHz)
- Memory: 2 GB DDR4 RAM, 64 MB flash memory
- Automatic flash-boot and fast boot option
- Three-level functional safety concept
- Gigabit Ethernet host and I/O interfaces
- Gigabit automotive Ethernet I/O interface
- Synchronization based on IEEE802.1AS or TSN; support for VLANs
- WLAN option
- USB mass storage interface for data logging
- Analog and digital I/O; bus and network interfaces (CAN, CAN FD, LIN, FlexRay, (automotive) Ethernet); I/O capabilities depend on MicroAutoBox III variant
- More extension and combination options:
  - Powerful FPGA-based e-drive and engine control
  - Embedded PC for Windows®, Linux and RTMaps applications
  - RapidPro signal conditioning and power stages
  - AUTERA, the advanced data logging and prototyping system for autonomous driving applications
- Shock and vibration tested (ISO 16750-3:2007)
- Operating temperature (passive cooling): -40°C up to 80°C (-40 up to 175 °F)
- Vehicle battery supply voltage: 12V, 24V, 48V
- Software tool chain: support of ControlDesk, ConfigurationDesk, Bus Manager, etc.