

The MT-CAN-LIN-BSI model is a teaching support intended for studying the communication networks used in modern vehicles: CAN High Speed, CAN Low Speed and LIN bus.



OBJECTIVES

- Discover the different communication protocols: CAN High speed, CAN Low Speed and LIN.
- Distinguish and visualize the differences between the analogic and the multiplexed parts on the model and its electrical diagrams.
- Visualize and understand the different operation and emergency strategies.
- Discover the servo devices associated to the headlamps (correction of height and rotation).
- Apply practical projects on bus frames analysis for:
 - rear-view mirror and front windows lift control,
 - multifunction display control,
 - engine information, speed, water temperature,
 - headlamps height correction control.
- Apply diagnosis methods (breakdown box included).

DESIGN

The model based on an aluminum frame, built with caster wheels, embeds several real automotive components: control panel, headlamps switch, back lights, central ECU, rear-view mirrors, xenon lights (with correction of height and rotation). It also embeds a measurement panel as well as a hidden “breakdown” box allowing creating faults on communication networks.

SPECIFICATIONS

Automotive real components:

Dashboard, AC control screen, multi-functions display, windows lift and driver's door aisle mirror control desk, passenger's door control desk, Radio CD with two speakers, electrical retractable aisle mirrors, both front door latches, control panel, warning and central locking buttons, steering wheel ECU with lamps, wipers and radio switches, front and rear sensors for headlamps height correction, central unit ECU, headlamps.

Communication networks:

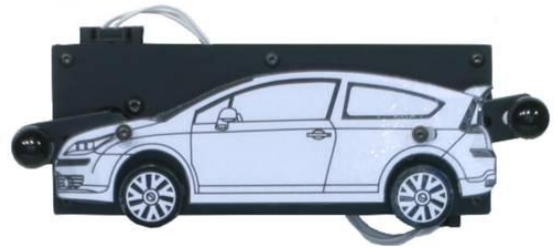
As on the original vehicle, the ECUs, sensors and actuators communicate together through 1 CAN High Speed @ 500kbit/s bus, 2 CAN Low Speed @ 125 Kbit/s networks and 1 LIN bus.

An OBD II SAE J1962 standard diagnostic plug allows the use of any multibrand diagnostic tool.



Additional components:

- 12 V high frequency battery charger connected to a battery (provided).
- 230V socket-outlet and 230V cable for plugging the simulator to the power supply.
- A control panel allowing to control stop lights, hand brake, and fuel gauge level and to visualize the rear windscreen's de-icing. Throttle pedal position and water engine temperature represented by potentiometers. Air bag, hand brake, engaged gear switches.
- Hidden and lockable breakdown box with protection fuses for fault creation (open circuit, short circuit to +12v, ground, etc.).



EQUIPMENT

The **MT-CAN-LIN-BSI** model is delivered with a professional communication interface **USB-MUX-4C4L** that support the communication between computer (type PC) and communication networks CAN HS/LS, LIN and ISO9141. This box offers:

- 4 CAN (HS/LS/SW) channels,
- 4 LIN/ISO9141 channels,
- 12 analog or digital inputs,
- 4 ISO9141/L or TOR outputs,
- 6 TOR/PWM outputs,
- 1 RS232 link.



The associated cables to be connected to the model - **AMUX-DB9-CAN** and **AMUX-DB9-LIN** – are delivered with.

The **EXXOTEST® MUXTrace Expert** application is an analysis and emulation tool for CAN HS/LS, LIN and ISO9141 communication networks. The project design, particularly easy and intuitive, makes of **MUXTrace Expert** a comfortable tool for analysis, observation, acquisition or data exchange simulation. The **MUXTrace Expert** software is delivered with the **MT-CAN-LIN-BSI** teaching model.

As an option you can use with this teaching model our acquisition system dedicated to automotive - **REFLET®** that allows using:



- USB connection,
- 4 traces analog and digital oscilloscope module,
- 2D tools interface,
- 3D instruments interface, dynamic visualization of 3D object - **EXXOTEST®** innovation

OTHER

- Power supply: 220/110Vac – 50/60Hz
- Size: 1200 X 800 X 1800 mm (transportation box)
- Gross weight : 110 Kg (ready to ship)
- Net weight: 100 Kg

Find all **EXXOTEST®** products on the Internet: www.exxotest.com