

OptoLyzer® MOCCA LAN

Hardware Interface for Automotive Ethernet Development



The OptoLyzer MOCCA LAN is a hardware interface supporting automotive Ethernet development. It can be used as a media converter between different Ethernet physical layers. The OptoLyzer MOCCA LAN is also capable of spying on the traffic of an Ethernet point-to-point connection. The collected data can be displayed and analyzed within the OptoLyzer Studio software. For custom applications, the OptoLyzer MOCCA LAN can also be controlled with the help of K2L.Bus, which is a .NET API. Keeping the firmware of the hardware interface up to date can easily be accomplished with K2L's flasher software.

Product Benefits

- Compact automotive networking hardware interface
- Supports various Ethernet physical layers:
 - 100Base-T1
 - 100Base-TX
 - Quiet-WIRE® technology
- 1000Base-TX interface for connection to external data logger device
- Two CAN 2.0 interfaces
- Device supports the following applications:
 - Ethernet media converter
 - Spy for Ethernet
 - Message injection
- Time synchronization with other devices of the OptoLyzer MOCCA family allowing access to CAN, CAN FD, LIN and FlexRay®
- Data display and analysis with user-friendly OptoLyzer Studio software
- Flash application for device update
- K2L.Bus API
 - Easy programmable hardware access
 - Includes various programming examples
- 12V power supply

Ordering Information

- OptoLyzer MOCCA LAN Order No. B10468
- OptoLyzer Studio Foundation LAN Order No. B10469

Hardware Interfaces

The OptoLyzer MOCCA LAN is equipped with two interfaces for each of the following Ethernet physical layers:

- 100Base-T1
- 100Base-TX, Quiet-WIRE® technology and 1000Base-TX share the same connector

Quiet-WIRE is a 100Base-TX compatible technology from Microchip Technology Inc., offering superior EMC characteristics. When a 100Base-T1 connection is monitored, the available 1000Base-TX port can be used to connect the MOCCA LAN to a data logger device, in order to trace the full duplex traffic.

The connection to the PC is realized via a USB 2.0 interface.

Software Support

OptoLyzer Studio

Uses of the OptoLyzer MOCCA LAN devices (media converter/spy/message injection) can be configured by OptoLyzer Studio. The trace view neatly displays the traffic on the attached busses. Common protocol types are supported for disassembly. The behavior of protocol parameters can be observed in a Graph View during online measurements, as well as in offline mode. Additionally, there is a Filter Editor available to define own filter conditions.

K2L.Bus API

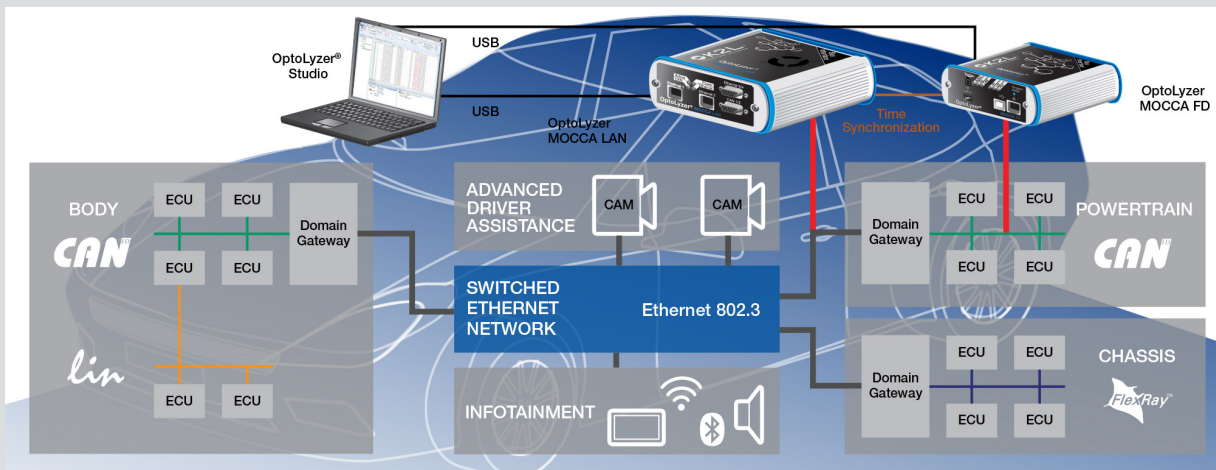
The K2L.Bus API provides user-programmable access to the OptoLyzer MOCCA LAN. Various examples describe how the API can be applied.

Time Synchronization Application Example

Consider a complex network architecture that requires a complete analysis of the traffic that is transceived over Ethernet and additional busses. To get an excellent impression about the system behavior at the same point of time, system activities need to be considered relative to a common time base. This is achieved by connecting the OptoLyzer MOCCA LAN with an OptoLyzer MOCCA FD over a time synchronization cable. The synchronization cable is also capable of carrying power.

The figure below shows a scenario in which the OptoLyzer MOCCA LAN observes an Ethernet connection between the switch and the powertrain domain gateway. At the same time the OptoLyzer MOCCA FD observes the CAN FD traffic between the Electronic Control Units (ECUs) of the powertrain domain.

Time-synchronized data, collected by the OptoLyzer MOCCA devices, is transmitted over USB to the OptoLyzer Studio that is running on a PC.



OptoLyzer MOCCA LAN monitoring an Ethernet connection between the switch and the powertrain domain gateway



K2L is committed to working toward a sustainable environment. We endeavor to make continual improvements in natural resource conservation through efficient product design and global operations thereby reducing greenhouse gas emissions generated by our products and facilities. Our environmental life cycle process seeks to reduce our carbon footprint through product life and recyclability and efficient use of materials, energy and transportation. We remain committed to promoting smart energy policies across our global organization.

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