# **EDIC**flex

Diagnostics and Flashing on FlexRay and CAN – with just one Hardware

#### The Standard for High-Speed and Time-Triggered Applications in the Vehicle

FlexRay<sup>™</sup> is a fast, scalable and deterministic bus system which enables the realization of innovative, distributed control functions and security-critical applications. Due to its high bandwidth, it is also used as a backbone in vehicle networking.

#### **Areas of Application**

The engineering, simulation and testing of FlexRay networks require a powerful and flexible hardware interface. Particularly for complex diagnostics and flash programming applications, it is important that the necessary protocol stacks can be loaded directly onto the hardware and run there. This is the only way to fulfill demanding timing requirements reliably.

#### **Advantages of EDICflex**

The EDICflex interface is a powerful hardware platform which was designed to suit the requirements of FlexRay. EDICflex communicates with the PC via Fast-Ethernet TCP/IP and can process large amounts of data without any problems due to its powerful microcontroller. The interface is linked to the FlexRay bus via the FlexRay chip Freescale MFR4300. An upgrade to new chip generations is realized with plug-in IP modules.

In addition to two FlexRay channels (10 MBit/s), the interface has two CAN channels (ISO 11898-2 HighSpeed and ISO 11898-3 LowSpeed). The FlexRay and CAN messages can thus be acquired on the same time basis.

Four trigger outputs and two trigger inputs are available for combination with external hardware components.

The sturdy metal housing with top-quality connectors as well as the wide temperature and input voltage range allow a large number of uses in the vehicle environment.

An API with the functionality for the configuration, sending, receiving and monitoring of FlexRay and CAN messages is contained in the driver software.

## **Data Sheet**



FlexRay hardware platform optimized for diagnostics and flash programming

## Embedded Software Module for Diagnostics

The flexible software architecture permits seamless integration of the optional embedded diagnostic module which contains a protocol stack with transport layer and UDS diagnostic service processor. Due to the fact that it is realized as an embedded software module, applications such as DTS have a high-performance platform at their disposal with reliable realtime behavior for diagnostics and flash programming. The diagnostic module can be equipped with a PDU-API for customized applications.

Customized software modules for other applications can be realized based on the existing software platform and Softing's expertise in vehicle communication. Thanks to the wake-up and sleep mechanisms of EDICflex, powerful applications for standalone operation without a PC can be realized.

#### **An Overview of Features**

- Powerful hardware platform
- 2 FlexRay and 2 CAN channels with common time stamps for the precise gateway test
- Embedded module available with assured time response for diagnostics and flash programming
- Sturdy housing for flexible use in the lab, test bed, test vehicle and in production



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#### **Data Sheet**

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#### **Technical Data**

FlexRay	<ul> <li>Channels: 2 x 10 MBit/s</li> <li>Controller: Freescale MFR4300 (upgrade with plug-in IP modules)</li> <li>Transceiver: Philips TJA 1080</li> </ul>
CAN	Channels: 2 x ISO 11898-2 and ISO 11898-3, can be switched via software
PC interface	Fast Ethernet 10/100 MBit
Trigger interfaces	4 outputs, 2 inputs
Microcontroller	Freescale MPC866, 130 MHz
Memory	64 MB RAM, 32 MB flash memory
Input voltage range	6.5 to 50 V DC
Operating temperature range	- 40 + 70 °C

## **System Requirements**

PC with Windows 2000 or XP and Ethernet interface

## **Delivery Scope**

- EDICflex hardware interface
- Power cable
- Ethernet cableDocumentation on CD

## **Diagnostic Software (optional)**

Protocol extension for FlexRay Real-time capable thanks to embedded diagnostic module; with ODX database, e.g. for DTS V7

## Cables (optional)

EDICflex-KF1	<ul> <li>FlexRay-1:1 cable for EDICflex; cable with integrated 100-Ohm bus termination resistor; Lemo connector on Sub-D9 jack; length approx. 2 m</li> </ul>
EDICflex-KFY	FlexRay-Y cable for EDICflex; Lemo connector on Sub-D9 jack and Sub-D9 connector; leadth age 2 or
	iength approx. 2 m
EDICflex-KC	CAN-1:1 cable for EDICflex; Lemo connector
	on Sub-D9 connector; length approx. 1 m





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