FlexCard PMC-II

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BENEFITS
• 8x exchangeable bus interfaces
• Physical Layer available for CAN, CAN FD, FlexRay, Ethernet and BroadR-Reach
• Synchronous timestamp generation for all of the 8 bus interfaces (resolution 1 us)
• PMC-Adapter available for: PCI, PCIe, PXI
• Driver available for: Windows, Linux, LabVIEW
• Numerous triggering capabilities
• Switchable on-board bus termination
• Analysis software included

FLEXCARD PMC-II – OVERVIEW
The FlexCard PMC-II is a bus interface device for automotive bus systems in PMC design. 8 bus interfaces with Physical Layer (FlexTiny II) slots allow several configurations of bus Communication Controllers.

• 8x exchangeable bus interfaces
• Mezzanine PC interface
• Synchronous timestamp generation for all of the 8 bus interfaces (resolution 1 us)
• FlexTiny II exchangeable Physical Layer slots
• 4x Binder 712 8pol connector
• 3,3 V and 5 V compatible PCI power supply
• Display with LEDs

• Trigger- 2x in/out configurable
• Configurable bus termination
• Analyzing software “FlexAlyzer” included
• Bosch E-Ray IP Core FlexRay controller
• Bosch D_CAN IP Core CAN controller
• Bosch M_CAN IP Core CAN controller
• MorethaniP 10/100/1000 Mbps Ethernet controller
• V2.1 A FlexRay protocol specification
• V2.0 A/B CAN protocol specification
• ISO 11898-1:2015 CAN protocol specification
• Bosch CAN FD specification 1.0
FlexCard PMC-II

**ETHERNET**
- Synchronous hardware timestamps for all bus interfaces (CAN, FlexRay, Ethernet)
- Resolution of the timestamp 1 us (32-bit)
- FlexCard PMC-II with Ethernet will be detected as standard Ethernet interface
- Access to the Ethernet packets by NDIS driver (raw sockets possible)
- Special WinPcap version allows access to the hardware timestamps of the Ethernet packets
- Access to the CAN and FlexRay packets by standard FlexCard API
- 100 Mbit Ethernet Physical Layer and BroadR-Reach Physical Layer available
- External synchronization by trigger input possible

**FLEXRAY**
- Asynchronous monitoring mode allows listening without FlexRay synchronicity
- Combined asynchronous and synchronous monitoring mode (the procedure of a bus startup can be monitored and registered exactly)
- Configurable TX-acknowledges
- Network synchronicity will be reported immediately (with timestamp)
- Chronological correlation of bus messages with one timestamp base
- Firmware update directly at the user PC possible
- Extensive filter configuration available
- Significant bus error messages
- Triggering on the precise slot, cycle

**CAN / CAN FD**
- Silent mode useable for listening without bus interference
- Transmit FIFO up to 512 messages
- Configurable TX-acknowledges
- Significant bus error messages

**PC INTERFACES**
- Native mezzanine PC interface (PMC)
- PCI Adapter available
- PCIe Adapter available
- PXI Adapter available

**DRIVER**
- Uniform FlexCard API
  (Same API for FlexCard PMC-II and FlexCard USB-M)
- CPU load reduction through DMA
- Driver Windows 32-bit (Windows XP, Vista, 7)
- Driver Windows 64-bit (Windows 7)
- Driver Xenomai 32-bit (2.5)
- Driver LabVIEW 32-bit (8.6)
- Driver Linux 32-bit (2.6.25 – 2.6.35)

**ADDITIONAL MODULES**
The FR/FR-Syncmodule is a special FPGA image, which allows the synchronization of two independent FlexRay networks. After the start-up of the master network at slot 1, the slave network at slot 2 will be started with the defined time offset. When both networks are synchronized, the defined time offset will be held constant by a control algorithm.
- Allows the realization of synchronized FlexRay/FlexRay gateways
- All FlexCard API functions can be used

**PHYSICAL LAYER FLEXTINY II**
You can use the following FlexTiny II combinations with FlexCard PMC-II

<table>
<thead>
<tr>
<th>Slot 1</th>
<th>Slot 2</th>
<th>Slot 3</th>
<th>Slot 4</th>
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<td>BroadR-Reach</td>
<td>FlexRay*</td>
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<td>Dual-CAN</td>
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</tbody>
</table>

* FlexRay is self-sync capable

**ORDER INFORMATION FLEXCARD PMC-II**

- FlexCard PMC-II Windows
  PMC interface card with option for 4 FlexTiny II
  Includes Windows driver
  3-V0550A01

- FlexCard PMC-II Linux
  PMC interface card with option for 4 FlexTiny II
  Includes Windows and Linux driver
  3-V0550B01

**ORDER INFORMATION FLEXTINY II FOR FLEXCARD PMC-II**

- Extension PMC-II CAN
  FlexTiny II exchangeable Physical Layer with dual CAN highspeed TJA 1041
  3-V0550N01

- Extension PMC-II CAN-FD
  FlexTiny II exchangeable Physical Layer with dual CAN FD TJA 1044
  3-V0550H01

- Extension PMC-II FlexRay
  FlexTiny II exchangeable Physical Layer with FlexRay TJA 1080
  3-V0550M01

  With 100-Mbit Ethernet please ask

  With 100-Mbit BroadR-Reach please ask

**ORDER INFORMATION CABLES FOR FLEXCARD PMC-II**

- BusCable 100 8B712m 9SUBDF
  IO cable 8pol Binder male to 9pol SubD female (CAN, FlexRay, LIN), length: 1 m
  3-00342J01

- BusCable 200 8B712m
  IO cable 8pol Binder male to 9pol SubD. female (CAN, FlexRay, LIN), length: 2 m
  3-00341J02

- IO Cable 100 1MMCXf 1BNCm
  IO-Cable 2pol (Trigger Out)
  3-00340H01

**ORDER INFORMATION PC INTERFACES FOR FLEXCARD PMC-II**

- PMC-to-PCI-Adapter
  3-00330C01

- PMC-to-PCIe-Adapter please ask

- PMC-to-PXI-Adapter please ask