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FlexCard PMC-II

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BENEFITS

- 8x exchangeable bus interfaces
- Physical Layer available for CAN, CAN FD, FlexRay, 100BASE-TX and 100BASE-T1
- Synchronous timestampgeneration for all of the 8 bus interfaces (resolution 1 us)
- PMC-Adapter available for: PCI, PCIe, PXI
- Driver available for: Windows, Linux
- Numerous triggering capabilities
- Switchable on-board bus termination
- Analysis software included
- Trigger- 2x in/out configurable
- Configurable bus termination
- Analyzing software FlexAlyzerV2 included
- Bosch E-Ray IP Core FlexRay controller
- Bosch D_CAN IP Core CAN controller
- Bosch M_CAN IP Core CAN FD 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 – OVERVIEW

The FlexCard PMC-II is a bus interface for automotive bus systems in PMC design. The card's 8 bus interfaces can be configured for different bus systems via Physical Layer (FlexTiny II) slots.

- 8x exchangeable bus interfaces
- PMC interface (PCI Mezzanine Card)
- 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
- LEDs signal the state of the network

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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
- 100BASE-TX Physical Layer and 100BASE-T1 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 and 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 PMC (PCI Mezzanine Card) interface
- 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, 10)
- Driver Windows 64-bit (Windows 7, 10)
- Driver Xenomai 32-bit (2.5)
- Driver Linux 64-bit (4.x)

ADDITIONAL MODULES

The FR/FR-Syncmodule is a special FPGA image, which allows the synchronization of two independent FlexRay networks. After the startup 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 FlexTiny2 combinations with FlexCard PMC-II

Slot 1	Slot 2	Slot 3	Slot 4
2x CAN-HS	2x CAN-HS	2x CAN-HS	2x CAN-HS
2x CAN-FD	2x CAN-FD	2x CAN-FD	2x CAN-FD
FlexRay A/B (*)	2x CAN-HS	2x CAN-HS	2x CAN-HS
FlexRay A/B (*)	2x CAN-FD	2x CAN-FD	2x CAN-FD
FlexRay A/B	FlexRay A/B	2x CAN-HS	2x CAN-HS
FlexRay A/B	FlexRay A/B	2x CAN-FD	2x CAN-FD
FlexRay A/B	FlexRay A/B	FlexRay A/B	2x CAN-HS
FlexRay A/B	FlexRay A/B	FlexRay A/B	FlexRay A/B
100BASE-TX	FlexRay A/B (*)		2x CAN-HS
100BASE-TX	FlexRay A/B (*)		2x CAN-FD
100BASE-T1	FlexRay A/B (*)		2x CAN-HS
100BASE-T1	FlexRay A/B (*)		2x CAN-FD

(*) - SelfSync – Allows autonomous start of the bus without further sync nodes

ORDER INFORMATION FLEXCARD PMC-II

Product	Description	Order number
FlexCard PMC-II	The FlexCard PMC-II is a PMC bus interface card.	3-V0550A01

ORDER INFORMATION ACCESSORY PARTS FLEXCARD PMC-II

Product	Description	Order number
FlexTiny2 100BASE-T1	Pluggable transceiver module with one 100BASE-T1 transceivers (BC-M89810A2AMLG, Broadcom)	3-V0550I01
FlexTiny2 100BASE-TX	Pluggable transceiver module with one 100BASE-TX transceivers (DP83640TVV, NSC)	3-V0550E01
FlexTiny2 FlexRay	Pluggable transceiver module with two FlexRay transceivers (TJA1080ATS, NXP)	3-V0550M01
FlexTiny2 CAN-FD	Pluggable transceiver module with two CAN-FD/HS transceivers (TJA1044GT, NXP)	3-V0550H01
FlexTiny2 CAN-HS	Pluggable transceiver module with two CAN-HS transceivers (TJA1041TD, NXP)	3-V0550N01
Standard Binder bus cable (2 m)	8 pole Binder male to 9 pole D-Sub female connector	10016468
Standard Binder 2x Y-bus cable (2 m)	8 pole Binder male to 2 x 9 pole D-Sub female connector	10016469
BASE-T1 Binder bus cable (2 m)	8 pole Binder male to 9 pole D-Sub female connector - PIN 1,2 & 4,5	3-00342P01
BASE-T1 Binder 2x Y-bus cable (2 m)	8 pole Binder male to 2 x 9 pole D-Sub female connector - PIN 4,5	3-00342Q01
PMC-to-PCI-Adapter	Adapter for using the FlexCard PMC II with PCI slots.	10016463
PMC-to-PCIe-Adapter	Adapter for using the FlexCard PMC II with PCIe slots.	10016484

Version 03 - 11/2019 | * FlexRay is self-sync capable