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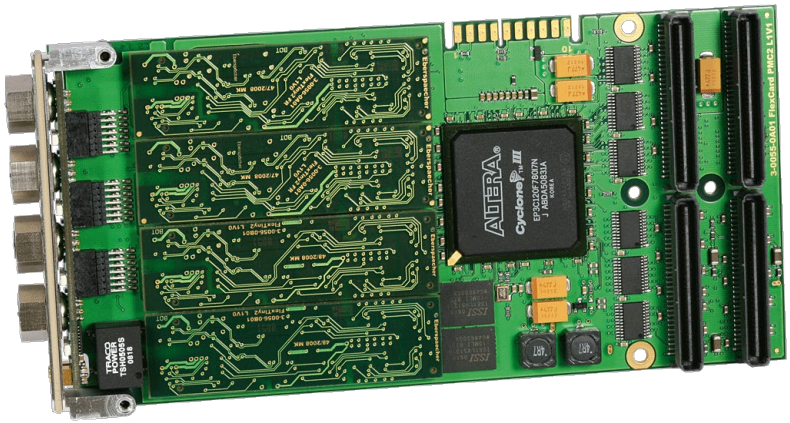
FlexCard PMC-II

Pin Assignment for Ethernet and 100BASE-T1



NOTICE

ESD (Electro Static Discharge) sensitive product.

Refer to chapter 1.4 and follow the safety and handling instructions.

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Any semiconductor devices have an inherent chance of failure. You have to protect against injury, damage or loss from such failures by incorporating safety design measures into your facility and equipment such as redundancy, fire protection, and prevention of over-current levels and other abnormal operating conditions.
The safety and handling instructions in this document have to be followed strictly.

Revision History

Version	Date	Description
D1V0-F	03-Jun-2019	Initial release.
D1V1-F	06-Oct-2021	Updated legal information

Related Hardware / Software Versions

Product	Reference No.	Version	Remarks
FlexCard PMC-II Hardware	3-00550A02	15	PMC II card with 2 triggers and support for FlexRay, CAN, CAN-FD, Ethernet or Automotive Ethernet depending on the available *FlexTiny II*
FlexTiny II Ethernet	3-00560D01	10	Physical layer board for 100BASE-TX (100 MBit/s Ethernet)
FlexTiny II BRR	3-00560H01	20	Physical layer board for 100BASE-T1 (100 MBit/s Automotive Ethernet)

Contents

1 General

1.1 Intended User Group

This product may only be used by expert technicians and/or engineers who are qualified and familiar with electronic components and systems.

Each person involved with setup or operation of the product must

- be a qualified technician or engineer
- strictly adhere to this manual
- receive a briefing by an authorized person

	NOTICE
	If you are unsure of how to use the product as intended or have any questions about the use of the product, please discontinue use of the product immediately and contact the STAR ELECTRONICS GmbH & Co. KG Support.

	WARNING
	The product may only be used by expert technicians and/or engineers who are qualified and familiar with electronic components and systems! The use of the product by non-professionals is not permitted and strictly forbidden!

1.2 Intended use

This document describes the connector pin assignment when using the *FlexCard PMC-II* with a FlexTinyII Ethernet or a FlexTinyII Automotive Ethernet.

	Reference
	Further information about the FlexCard PMC-II can be found in the document “3-0055-0P01-D05 FlexCard PMC-II Instructions for Use”.

1.3 Used Pictograms

The meaning of used pictograms is shortly described below.

Follow the specific instructions in the document where these pictograms are placed.

	NOTICE
	Used to indicate an electrostatic discharge sensitive product. The product is subject to damage by ESD, if no precautions are taken.

	Reference
	References to other documents.

1.4 Safety and Handling Instructions

	Reference
	Security instructions for the FlexCard PMC-II can be found in the document “3-0055-0P01-D05 FlexCard PMC-II Instructions for Use”.

	NOTICE
	**ESD (Electro Static Discharge) sensitive product** *STAR ELECTRONICS GmbH & Co. KG* products lacking protective enclosures are subject to damage by ESD. Take proper ESD precautions to avoid performance degradation or loss of functionality! Unpack, handle or operate these products only in environments where sufficient precautionary measures have been taken in respect to ESD hazards. A guideline is available in chapter 5.1. Only appropriately trained personnel (such as electricians, technicians and engineers) may handle and/or operate these products.

1.5 Meaning of Text Styles

In this document *filenames* are marked with a different text format.

2 Pin Assignment

2.1 Ethernet

Figure 1: FlexTiny II ETH (3-0056-0D01) Front panel jack pin assignment, front view of the 8 pin Binder 712 female connector

Pin number Binder 712 female	Signal	Color
1	Shield	
2	R1 (high)	
3	TX+	
4	TX-	
5	RX+	
6	RX-	
7	R2 (high)	
8	GND	

Table 1: FlexCard PMC-II (3-0056-0D01) Binder connector assignment

The following table lists the cable compatibility:

Cable	FlexTiny version
Cable 3-0034-1O02	3-0056-0D01

The cable has a female Binder 722 connector and a connector for a RJ45/8P8C network jack.

2.2 Automotive Ethernet (100BASE-T1)

Figure 2: FlexTiny II BRR (3-0056-0H01 HW Version 20) Front panel jack pin assignment, front view of the 8 pin Binder 712 female connector

Pin number Binder 712 female	Signal	Color
1	Shield	
2	GND	
3	100BASE-T1 BusPlus	
4	100BASE-T1 BusMinus	
5	Not connected	
6	Not connected	
7	Not connected	
8	GND	

Table 2: FlexCard PMC-II (3-0056-0H01 HW Version 20) Binder connector assignment

The following table lists the cable compatibility:

Cable	FlexTiny version
Cable 3-0034-1J02	3-0056-0H01 HW Version 20

The cable has a female Binder 722 connector and a female SubD connector.

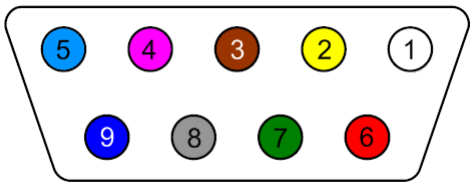

Figure 3: Cable 3-0034-1J02 - SubD9 pin assignment, front view

Pin number SubD9 female	Signal	Color
1	Not connected	
2	100BASE-T1 BusMinus	
3	GND	
4	Not connected	
5	Shield	
6	Not connected	
7	100BASE-T1 BusPlus	
8	Not connected	
9	Not connected	

Table 3: Cable 3-0034-1J02 - SubD9 pin assignment

3 FlexTiny Modules

The following figure shows the assignment of the *FlexTiny II* modules on the *FlexCard PMC*-II.

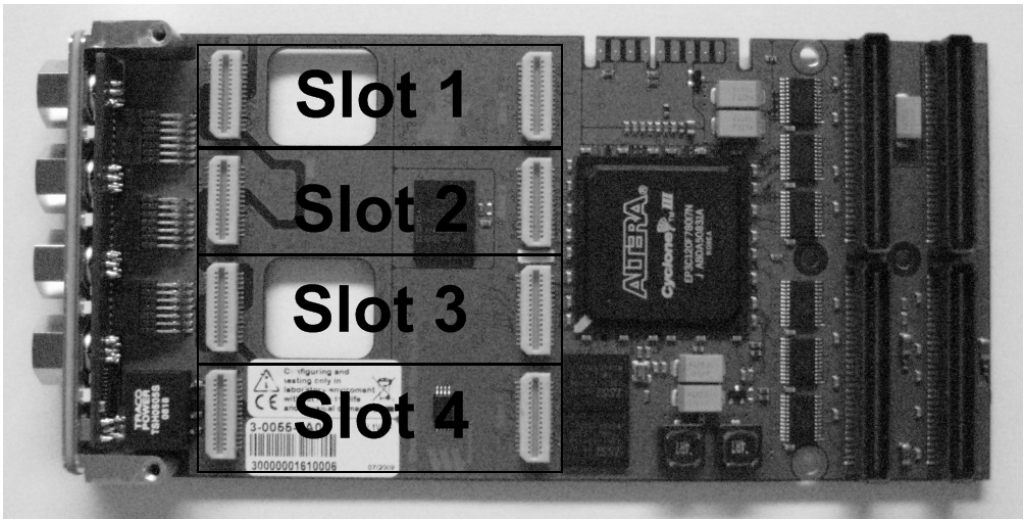

Figure 4: assignment of FlexTiny II modules

Refer to the following table to mount the correct FlexTiny II modules.

Used Firmware	FlexTiny II assignment			
	Slot 1	Slot 2	Slot 3	Slot 4
1 Ethernet, 1 FlexRay and 2 CAN	ETH/ 100BASE-T1	FlexRay	-	CAN
1 Ethernet, 1 FlexRay and 2 CAN FD	ETH/ 100BASE-T1	FlexRay	-	CAN FD

Table 4: FlexTiny II assignment in dependency of the used FlexCard PMC-II firmware

4 Ordering Information

4.1 FlexCard PMC-II

Product	Description	Ordering number
FlexCard PMC-II	The *FlexCard PMC-II* is a very flexible hardware solution that offers access to automotive bus systems (FlexRay, CAN, Ethernet). It may be equipped with maximum 4 *FlexTiny II* modules so that maximum 4 FlexRay interfaces (A+B), maximum 8 CAN interfaces, maximum 1 Ethernet interfaces or a combination are possible.	Please contact STAR ELECTRONICS GmbH & Co. KG

4.2 Accessory Parts

Product	Description	Ordering number
FlexTiny II Ethernet	Allows access to 100BASE-TX (100Mbit/s Ethernet).	Please contact STAR ELECTRONICS GmbH & Co. KG
FlexTiny II 100BASE-T1 (BRR)	Allows access to 100BASE-T1(100Mbit/s 100BASE-T1).	Please contact STAR ELECTRONICS GmbH & Co. KG
Customer specific parts		Please contact *STAR ELECTRONICS GmbH & Co. KG*

5 Appendix

5.1 Appendix A: Guideline for handling ESD sensitive Products

- Any tester, equipment, or tool used at any production step or for any manipulation of semi-conductor devices must have its shield connected to ground.
- The product itself and the carrier system of the product respectively must be placed on a conductive table top or covered by an antistatic surface (superficial resistivity equal to or higher than 0.5MΩ/cm²), grounded through a ground cable (conductive cable from protected equipment to ground isolated through a 1MΩ resistor placed in series).
- All manipulation of finished goods has to be made at such a grounded worktable.
- The worktable must be free of all non-antistatic objects.
- An antistatic floor covering grounded through a conductive ground cable (with serial resistor between 0.9MΩ and 1.5MΩ) should be used.
- It is recommended that you wear an antistatic wrist or ankle strap, connected to the antistatic floor covering or to the grounded equipment.
- If no antistatic wrist or ankle strap is worn, touch the surface of the grounded worktable before each manipulation of the ESD sensitive product.
- It is recommended that antistatic gloves or finger coats be worn.
- It is recommended that nylon clothing be avoided while performing any manipulation of parts.

5.2 Appendix B:

5.2.1 List of Tables

5.2.2 List of Figures

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