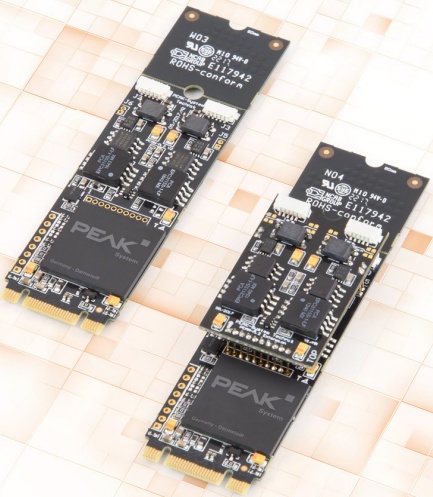
PCAN-M.2

Daisy Chain and Internal Termination

Support Document



Document version 1.0.0 (2019-11-06)

Relevant products

Product name	Model	Part number
PCAN-M.2 Single Channel	One CAN channel, galvanic isolation for CAN connection	IPEH-004083
PCAN-M.2 Dual Channel	Two CAN channels, galvanic isolation for CAN connections	IPEH-004084
PCAN-M.2 Four Channel	Four CAN channels, galvanic isolation for CAN connections	IPEH-004085

The cover picture shows the product PCAN-M.2 as Dual Channel (left) and Four Channel (right) version in 2280 format. The Single Channel model has an identical form factor like the Dual Channel version but varies in equipment.

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Document version 1.0.0 (2019-11-06)

1 Activating the Daisy Chain

The daisy chain can be activated via solder jumpers on the board to connect a CAN FD optimized connection to an existing CAN bus. This makes interference-free operation possible at higher CAN FD bit rates, because stubs and Y distributions are largely avoided.

When the daisy chain is activated, the pin assignment changes as follows:

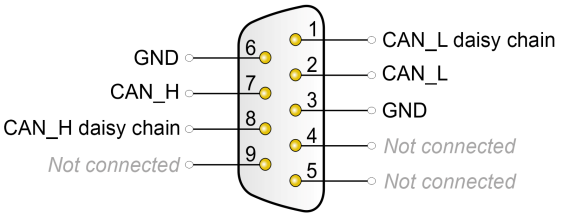

Figure 1: Pin assignment of High-speed CAN and daisy chain; male connector on the card

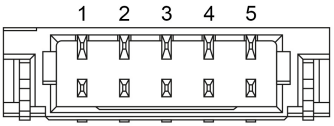

Figure 2: Front view of a CAN connector (SUR) on the PCAN-M.2 card (CAN 1 to 4)

Pin SUR	Function	Pin D-Sub
1	CAN_H daisy chain	8
2	CAN_L daisy chain	1
3	GND	3, 6
4	CAN_H	7
5	CAN_L	2

Do the following to activate the daisy chain:

Risk of short circuit! Solder with great care to avoid unwanted short circuits on the card.

Attention! Electrostatic discharge (ESD) can damage or destroy components on the card. Take precautions to avoid ESD.

Set the solder bridges corresponding to the desired settings.

Figure 3 on page 5 shows the positions of the solder fields on the bottom side of the card **(IPEH-004083/84/85)**. The table beside contains the possible settings.

Figure 4 on page 6 shows the positions of the solder fields on the top side of the extension card of the four-channel card **(IPEH-004085)**. The table below contains the possible settings.

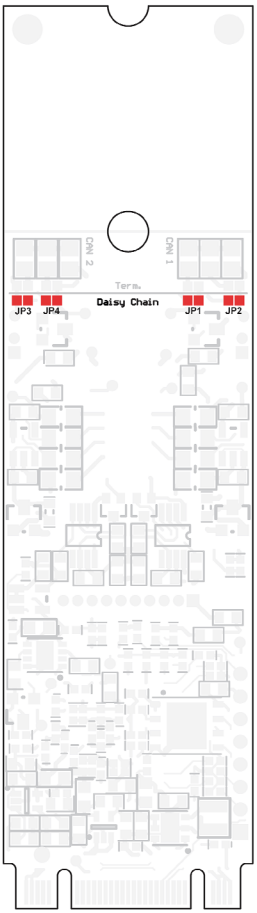

Figure 3: Positions of the solder fields on the bottom side of the card **(IPEH-004083/84/85)** for the activation of the daisy chain

D-Sub connector	Solder fields	Daisy chain	
		Without (standard)	Active
CAN 1	JP1 and JP2		●
CAN 2	JP3 and JP4		●

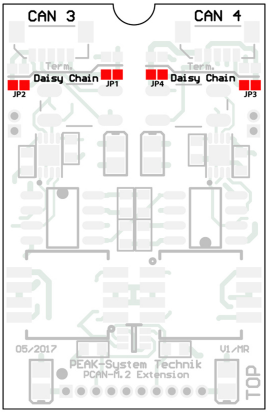

Figure 4: Position of the solder fields on the top side of the expansion card of the four-channel card **(IPEH-004085)** for the activation of the daisy chain

D-Sub connector	Solder fields	Daisy chain	
		Without (standard)	Active
CAN 3	JP1 and JP2		⬭
CAN 4	JP3 and JP4		⬭

2 Activating the Internal Termination

The internal termination can be activated by solder jumpers on the board to terminate one end of the CAN bus with 120 Ohms. At delivery the termination is not activated. A High-speed CAN bus (ISO 11898-2) must be terminated on both ends with 120 Ohms. Otherwise disturbances may arise.

Tip: We recommend to do termination at the CAN cabling, for example with termination adapters (e.g. PCAN-Term). Thus, CAN nodes can be flexibly connected to the bus.

Do the following to activate the internal termination:

Risk of short circuit! Solder with great care to avoid unwanted short circuits on the card.

Attention! Electrostatic discharge (ESD) can damage or destroy components on the card. Take precautions to avoid ESD.

Set the solder bridges corresponding to the desired settings.

Figure 5 on page 8 shows the positions of the solder fields on the bottom side of the card **(IPEH-004083/84/85)**. The table beside contains the possible settings.

Figure 6 on page 9 shows the positions of the solder fields on the top side of the extension card of the four-channel card **(IPEH-004085)**. The table below contains the possible settings.

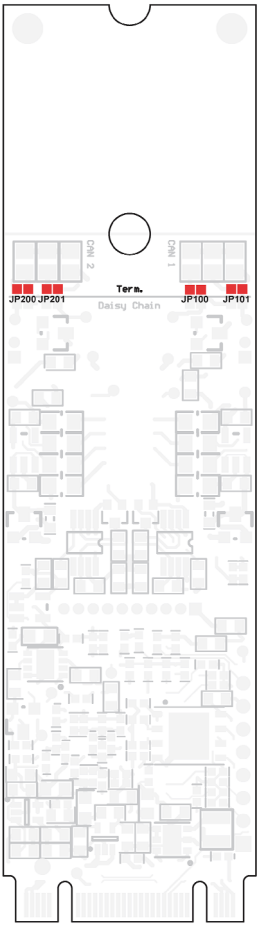

Figure 5: Positions of the solder fields on the bottom side of the card **(IPEH-004083/84/85)** for the activation of the internal termination

D-Sub connector	Solder fields	Internal termination	
		Without (standard)	Active
CAN 1	JP100 and JP101		●
CAN 2	JP200 and JP201		●

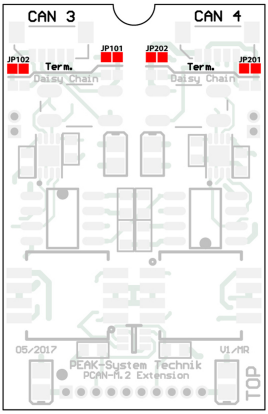

Figure 6: Position of the solder fields on the top side of the expansion card of the four-channel card **(IPEH-004085)** for the activation of the internal termination

D-Sub connector	Solder fields	Internal termination	
		Without (standard)	Active
CAN 3	JP101 and JP102		
CAN 4	JP201 and JP202		