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CANpro PCI Express
(dual channel)

Hardware User Manual

Part number: CAN-PRO2-PCIE

Information in this document is subject to change without notice.

V1.00.01

1 Installation

To properly install the CAN-PRO2-PCIE in your PC, please follow the instructions detailed in the next sections.

1.1 System requirements

To run the CAN-PRO2-PCIE on a PC, the PC must meet the following requirements:

- PCI Express slot
- Windows7, Windows Vista or Windows XP installed

1.2 Software installation

The CAN-PRO2-PCIE software is part of the “CAN Drivers and API” CD which is also available from the download section at www.softing.com.

- Insert the CD in your PC’s CD/DVD drive.
- Run the *CANDriversAndSoftware32.exe* for 32 bit operating systems or *CANDriversAndSoftware64.exe* for 64 bit operating systems.
- Please follow the instructions given by the setup software.

NOTE:
Make sure to install the software b e f o r e you install your CAN-PRO2-PCIE hardware for the first time.

1.3 Hardware and driver installation

Once the software setup is finished please shut down the PC and follow the steps listed below to install the CAN-PRO2-PCIE hardware.

NOTE:
To prevent damage to the CAN-PRO2-PCIE or to the PC, discharge yourself on a grounded object such as the metal housing of the PC before touching the board.

- Make sure that the PC and all peripheral devices are powered down.
- Remove the housing cover (refer to the PC manual).
- Select an available PCI Express slot and remove the slot cover (bracket)
- Plug the board into the slot on the motherboard of the PC.
- Fasten the bracket of the CAN-PRO2-PCIE using the screw.
- Reassemble the housing cover.
- Turn ON the PC and applicable peripherals. >*The computer will recognize the new hardware.*
- When “New Hardware Wizard” asks if Windows Update should be connected select *No*.
- In the next step select *automatic software installation.* This will install all required drivers.

1.4 Driver configuration

CAN-PRO2-PCIE is recognized by the driver automatically. Nothing more is usually required. However, advanced configuration – like changing the name of a CAN channel or setting a default baudrate - is possible with the Softing CAN Interface Manager.

- Click *Start – All Programs – CAN – Runtime System Configuration – Softing CAN Interface Manager (SCIM)*
- For more details on the driver configuration click
  Start – All Programs – CAN – Runtime System Configuration – SCIM_Manual

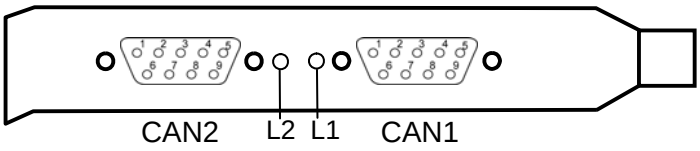
1.5 Application Software

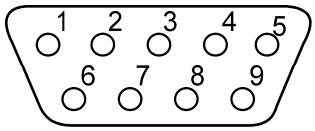
How to use CAN-PRO2-PCIE and how to write application software, is described in the Software Manual.

- To open this manual click
  Start – All Programs – CAN – CAN_API - DOC – Softing Layer2

2 CAN Connector Pin Assignment

Connector pinning complies to CiA standard DS 102.





Pinning of the 9 pin D-Sub connector

Pin	Signal
1	N.C.
2	CAN_L
3	Isolated GND
4	N.C.
5	Drain connected to connector shield (1M/2.2n to isolated GND)
6	Isolated GND
7	CAN_H
8	N.C.
9	N.C.

3 Status LEDs

Each CAN channel has a status LED that shows its current status .

Status LED	Status
off	no power or in reset state
flashing green	in initialization state
solid green	CAN started
flashing red	CAN error passive
solid red	CAN bus off

4 RoHS Information

CAN-PRO2-PCIE is RoHS compliant.

5 CE Information

This device complies with the requirements of the EC directive 2004/108/EC "Electromagnetic Compatibility" (EMC directive).

The product meets the following requirements:

- Emission: EN55022 Class B (ITE Product Standard)
- Immunity: EN61000-6-2 Generic Immunity Standard (industrial environments)

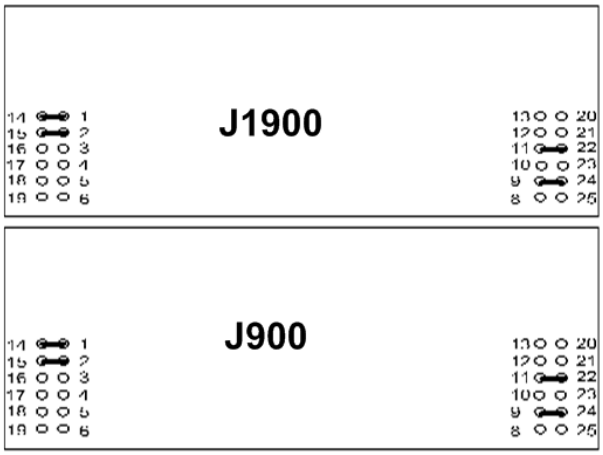
A "Declaration of Conformity" in accordance with the above standards has been made and is filed at Softing Industrial Automation GmbH, Germany.

NOTE:

- To satisfy the EMC requirements, the equipment used (PC, monitor, CAN stations, etc.) also has to meet the EMC requirements. A shielded cable must be used. In addition, the cable shield must be grounded properly.

6 Alternative Physical Layer

CAN-PRO2-PCIE is equipped with CAN High Speed transceivers according to ISO11898-2. It is possible to alter the physical layer by add-on hardware. By default jumpers are plugged in the add-on socket that supply the CAN controller signals Tx and Rx to the default transceiver chips. This default jumper setting is shown below.



Jumper	Signal
J1900.1-14	CAN_H channel 2
J1900.2-15	CAN_L channel 2
J1900.11-22	Rx0 channel 2
J1900.9-24	Tx0 channel 2
J900.1-14	CAN_H channel 1
J900.2-15	CAN_L channel 1
J900.11-22	Rx0 channel 1
J900.9-24	Tx0 channel 1

If you like to plug a different physical layer module, remove the jumpers of the channel(s) to be used.

NOTE:
Don't change the jumper settings if you run the interface in the default CAN High Speed environment. Changes may lead to malfunctions or destruction of the board.

Softing offers various alternative physical layer modules. Please contact Softing Automotive sales for more information about available modules and details about signaling.

7 Technical data

- Unit: PCI Express card, acc. to PCIe specifications r1.0a and CEM 1.1
- CPU: XC161, 40 MHz with internal TwinCAN CAN controller
- Memory: 256 kbytes XC161 on-chip Flash, 512 kbytes RAM,
- PC interface: PCI Express, single lane, 512 kbytes shared RAM
- PC interrupt: controlled by the operating system
- CAN interface: galvanically isolated (1kV) CAN high speed according to ISO 11898-2
- CAN connector: 2 Sub-D 9 pin male, pin assignment acc. to CiA DS102
- Baud rate: 3.125 kbit/s up to 1 Mbit/s
- Power supply: +12V (±5%); typ. 90 mA
  +3.3V (±5%); typ. 500 mA
- Temperature range: Operation: 0°C … 70°C (board ambient, i.e. inside the PC)
  0°C … 55°C (typ. PC ambient)
  Storage: -20°C … 70°C
- Relative humidity < 90% (non-condensing)