Softing Industrial Automation GmbH
Richard-Reitzner-Allee 6
D-85540 Haar
Tel.: (++49) 89/4 56 56-0
Fax.: (++49) 89/4 56 56-399
http://www.softing.com

CAN-ACx-PCI

Hardware User Manual

Part number: CAN-AC1-PCI (single CAN channel)
Part number: CAN-AC2-PCI (dual CAN channel)

Information in this document is subject to change without notice.

V1.02.01

1 Installation

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

1.1 System requirements

To run the CAN-ACx-PCI on a PC, the PC must meet the following requirements:

- free PCI slot
- Windows 7, XP or 2000 installed

1.2 Software installation

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

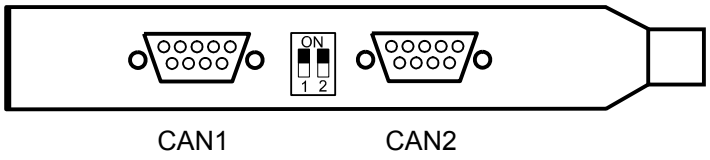
- Insert the CD in your PC’s CD/DVD drive.
- Run the *CANDriversAndSoftware32.exe* for 32 bit operating systems or *CANDriversAndSoftware64.exe* for 64 bit operating systems.
- Please follow the instructions given by the setup software.

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

1.3 Hardware and driver installation

1.3.1 Bus Termination

The bus termination resistance for CAN High Speed (ISO 11898-2) can be set onboard. To activate the resistance (124 Ω) the related DIP switch at the front panel of the PCI card must be set to “ON”, i.e. DIP switch “1” for CAN channel 1, DIP switch “2” for CAN channel 2 (only CAN-AC2-PCI).



Front panel of the CAN-AC2-PCI

NOTE:
Invalid bus termination may cause communication errors.

1.3.2 Mechanical installation

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

NOTE:
To prevent damage to the CAN-ACx-PCI 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 all peripheral devices are powered down.
- Remove the housing cover of the PC (refer to the PC manual).

- Select an available PCI slot for the CAN-ACx-PCI and remove the slot cover (bracket).
- Plug in the CAN-ACx-PCI, fasten its bracket with the screw and reassemble the housing.
- 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

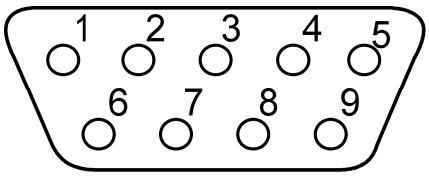
CAN-ACx-PCI is recognized by the driver automatically. Nothing more is usually required. However, advanced configuration – like changing the name of a CAN channel or setting a default baudrate - is possible with the Softing CAN Interface Manager.

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

2 Pin Assignment

2.1 CAN Connector

The pinning of the D-Sub connectors is defined according to the CiA recommendation for the CAN High Speed Bus. The shield is connected to the earth via PC housing.



Pinning of the 9-pin D-sub connector

Pin	Signal
1	N.C.
2	CAN_L
3	GND (DCDC)
4	N.C.
5	Drain (1M/100n to PC GND)
6	GND (DCDC)
7	CAN_H
8	N.C.
9	N.C.

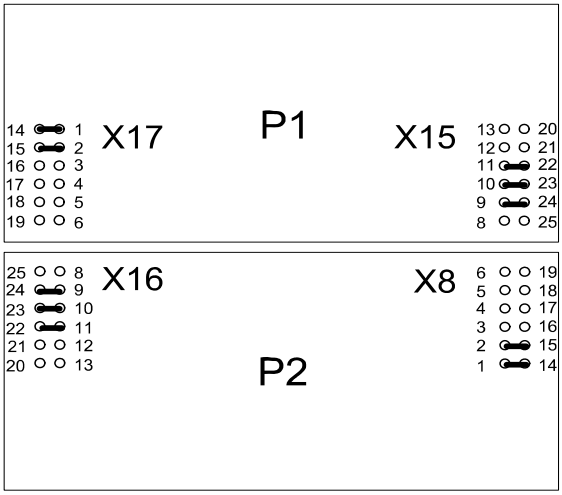
2.2 Physical Bus Interface (Piggyback)

The standard version of the CAN-ACx-PCI board is equipped according to the CAN High Speed specification (ISO11898). In this case jumpers are plugged in the piggyback connectors to supply the CAN controller signals Tx and Rx to the default transceiver chips.

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

To match different physical specifications, alternative transceiver circuits may be plugged in as piggybacks P1 and P2. In this case the jumpers need to be removed.

Default jumper setting of piggyback connectors



Signal definition for CAN High Speed

Jumper	Signal
X8.1-14	CAN_H channel 1
X8.2-15	CAN_L channel 1
X16.11-22	Rx0 channel 1
X16.10-23	Rx1 channel 1
X16.9-24	Tx0 channel 1
X17.1-14	CAN_H channel 2
X17.2-15	CAN_L channel 2
X15.11-22	Rx0 channel 2
X15.10-23	Rx1 channel 2
X15.9-24	Tx0 channel 2

3 CE Information

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

- 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.

4 RoHS Information

CAN-AC1-PCI and CAN-AC2-PCI are RoHS compliant.

5 Technical data

- Unit: PCI card, according to PCI Local Bus Specification Rev. 2.1
- CPU: Infineon SAB-C165
- Memory: 256Kbyte SRAM, 4Kbyte dual-port RAM
- Supported PC IRQs: controlled by the operating system
- Physical interface: CAN High Speed according to ISO 11898-2
- Connector type: Sub-D 9-pin male
- Connector assignment: According to CIA recommendation
- CAN controller: SJA1000
- Transfer rate: 10 .... 1000 kbit/s
- Power supply: +5V (±5%); max. 500mA by the PCI-Bus
- Temperature range: Operation: 0 °C … 70 °C (board ambient, inside the PC)
  0 °C … 55 °C (typ. PC ambient)
  Storage: -20°C … 70 °C
- Relative humidity: < 90% (non-condensing)