

COSATEQ

CO-PCICAN

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CO-PCICAN V0.4

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Manual Version V0.4

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Technical Summary

Important Information

Warranty

COSATEQ warrants the CO-PCICAN devices against defects in materials and workmanship for a period of two years from the day of shipment, as evidenced by receipts or other documents. At its option COSATEQ will replace or repair devices that prove to be defective during the warranty period. This warranty includes parts and labor.

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Trademarks

Patents

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COSATEQ's products are not designed with components and tested for a level of reliability suitable for use in or in connection with surgical implants or as critical components in any life support systems whose failure to perform can reasonably be expected to cause significant injury to a human.

In any application, including the above, reliability of operation of the **(software)** products can be impaired by adverse factors, including but not limited to fluctuations in electrical power supply, computer hardware malfunctions, computer operating system software fitness, fitness of compilers and development software used to develop an application, installation errors, software and hardware compatibility problems, malfunctions or failures of electronic monitoring or control devices,

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Confidentiality

COSATEQ covenants that any knowledge of confidences gained within a contractual relationship will only be used for actions based on this contract and will be kept confidential without any time limit.

This commitment does not apply to ideas, concepts and know-how which advert to programming or data which were already known to COSATEQ or were published beyond the contract.

COSATEQ covenants its staff to keep confidentiality.

COSATEQ is entitled to include the name of the customer and a short description of the adduced efforts into a list of reference addresses. No other actions of advertising will be taken without the customer's permission.

Special Handling and Cautions

In the handling of the CO-PCICAN proper care should be used to ensure that the device will not be damaged by Electrical Static Discharge (ESD), physical shock, or improper power surges and that precaution is taken to avoid electrocution. Ensure that standard ESD precautions are

followed. As a minimum, one hand should be grounded to the power supply in order to equalize the static potential.

Introduction

About CO-PCICAN

The CO-PCICAN enables you to connect a standard PC System to a CAN bus system. The CAN protocol is widely used in avionic, automotive and automation application.

The CO-PCICAN is optimized for real-time applications especially simulation.

Features

- 4 physically independent CAN channels
- Up to 1 Mbit/s data transmission rate, all channels may be configured independently
 - 4 independent CAN controller
 - TX queue with 30 slots per channel
 - RX queue with 80 slots per channel
- Electrical isolation/DC isolated of CAN-channels (pair wise)
- Switchable termination resistor
- PCI 32 bit, 33 MHz, 3.3 V/5 V
- Physical Size
 - Single slide-in card
 - Standard Short Card Format 175 x 107 mm
- Low power consumption
- 4 SUB-D9 connector (included 2 SUB-D9 connect via slot bracket for extensions)
- Temperature (operational) 0 ... 55 °C
- Temperature (storage) –10 ... 75 °C
- Relative humidity 5 ... 95 % non condensing
- Driver SCALE-RT, Windows, Linux, LabVIEW

Installation

Requirements

- PC, 100% IBM compatible
- One free PCI slot according to PCI spec 2.1

Mechanical Installations

1. Switch OFF power of the PC. Make sure that all peripherals are powered down, too.
2. Remove the housing cover of the PC (refer to the PC's manual for details).
3. Remove slot cover if necessary (refer to the PC's manual for details).
4. Plug the CO-PCICAN interface card into a free PCI slot.
5. Fasten the bracket of the CO-PCICAN with the enclosed screw.
6. Reassemble the housing of the PC.
7. Switch ON power of the PC.

Hardware Description

Environmental conditions

- Temperature (operational): 0...55°C
- Temperature (storage): -10...75°C
- Maximum temperature drift: 3°/min
- Relative humidity (non condensing): 5...95%
- Power supplied by the PCI Interface +5V \pm 5% with max 750mA

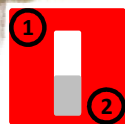
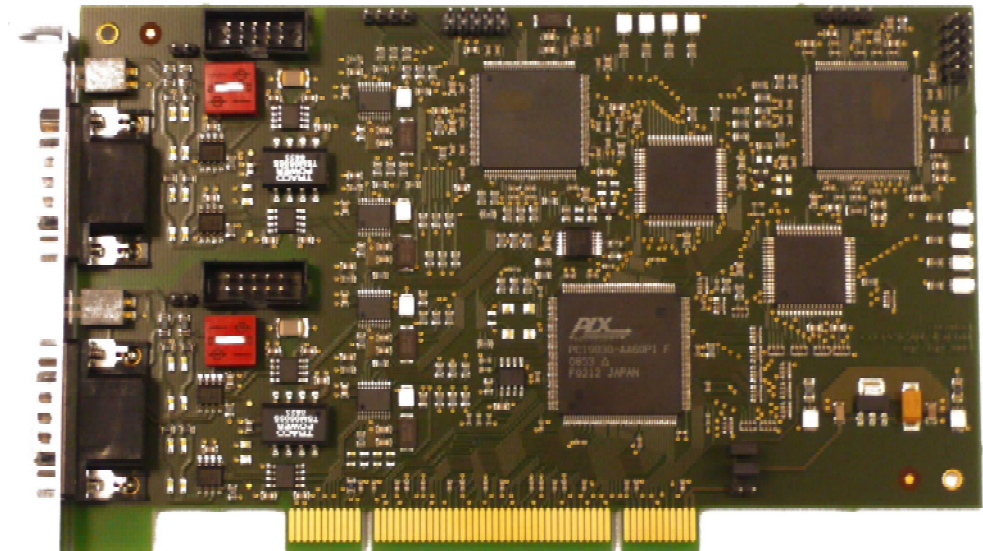
Overview

The CO-PCICAN card provides up to 4 channels for interfacing a standard PC to an CAN bus system. The card is connected to the host via a PCI Interface (rev 2.1).

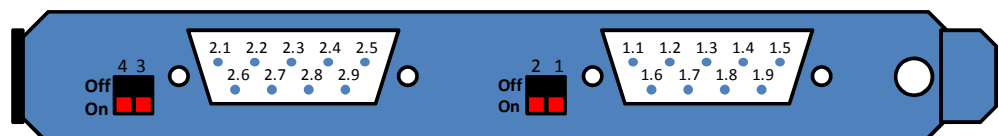
The host and the CO-PCICAN communicate via a dual ported RAM mounted on the PCI card.

Two powerful 32bit microcontroller processes all request from the host or data from another CAN bus unit.

Details on the PCB



- ① CAN Network x.1 and x.2 are connected with D-Sub9 port
- ② CAN Network x.1 is connected to D-Sub9 port and x.2 is connected to internal connector (additional slot bracket terminal)



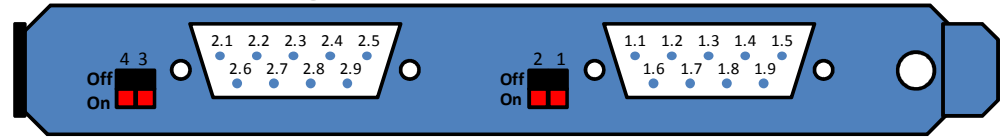
For turning on or off the terminators on CAN network use the dip switches on the slot bracket.

dip switch	CAN network
1	CAN 1
2	CAN 2
3	CAN 3
4	CAN 4

Pin Assignment

Pin Configuration CO-PCICAN/4

D-Sub9 Connector Configuration with 1 CAN Network Port



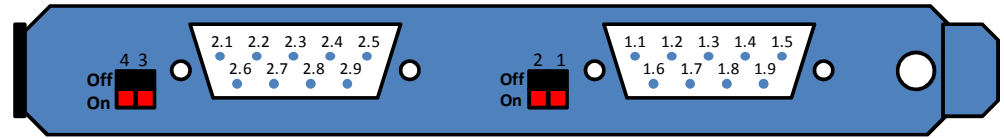
D-Sub9	CAN Network	D-Sub9	CAN Network
2.1	Open	1.1	Open
2.2	CAN_L4	1.2	CAN_L2
2.3	GND	1.3	GND
2.4	Open	1.4	Open
2.5	Open	1.5	Open
2.6	Open	1.6	Open
2.7	CAN_H4	1.7	CAN_H2
2.8	Open	1.8	Open
2.9	Open	1.9	Open

D-Sub9 Connector additional slot bracket



D-Sub9	CAN Network	D-Sub9	CAN Network
4.1	Open	3.1	Open
4.2	CAN_L3	3.2	CAN_L1
4.3	GND	3.3	GND
4.4	Open	3.4	Open
4.5	Open	3.5	Open
4.6	Open	3.6	Open
4.7	CAN_H3	3.7	CAN_H1
4.8	Open	3.8	Open
4.9	Open	3.9	Open

D-Sub9 Connector Configuration with 2 CAN Network Ports



D-Sub9	CAN Network	D-Sub9	CAN Network
2.1	CAN_L3	1.1	CAN_L1
2.2	CAN_L4	1.2	CAN_L2
2.3	GND	1.3	GND
2.4	CAN_H3	1.4	CAN_H1
2.5	Open	1.5	Open
2.6	GND	1.6	GND
2.7	CAN_H4	1.7	CAN_H2
2.8	Open	1.8	Open
2.9	Open	1.9	Open

Technical Summary

Unit	PCI PC Board
Memory	2x 16kByte Dual Port RAM
Connector	D-Sub 9
PC connector	PCI connector rev 2.1, 32-bit, capable of 3.3V and 5V signaling environment
max number of CAN ports	4
transfer rates	10k...1MBaud
Power Supply	5V ($\pm 5\%$) max 750mA via the PCI Connector
Temperature (operational)	0...55°C
Temperature (storage)	-10...75°C
Relative humidity	5...95%