

CAN Interface Card  
for PCI Express

### Features

- PCI Express Low Profile x1 interface
- CAN 2.0A and 2.0B format
- 2 Isolated channels
- 32-bit RISC processor
- ISO 11898 high-speed to 1 Mbit/sec

### Computer Interface

- PCIe slot
- Fast dual-port RAM
- 3.3 V

### Agency Approvals (Pending)

- CE, FCC
- RoHS 2002/95/EC

### CAN Monitor Software

- View CAN messages
- CAN bus loading
- Diagnostics
- Download firmware

### Plug-and-play

- CML & CMO
- Xenus
- Accelnet
- Stepnet

**CANopen**®



## DESCRIPTION

The PCIe-CAN is a dual-channel CAN interface card for the PCI Express bus. Each CAN interface is galvanically isolated to protect the PC hardware and provide better noise immunity in industrial environments.

The card incorporates a high performance 32-bit RISC processor. This processor handles all low level details of interfacing with the CAN hardware, offloading this task from the host processor. A 4 Kbyte dual-port RAM is used to buffer messages to and from the host processor. This memory space provides room for 10 transmit and 74 receive CAN messages per channel.

The on-board processor synchronizes its local clock to the host processor clock. All received messages are time stamped using this clock with 1 microsecond accuracy. Transmitted messages may also be time stamped with their actual transmit time. This allows for simple implementation of the CANopen network synchronization protocol (DS301 object 1013h).

Device driver support is provided for Windows and Linux. CANview bus monitoring software is available for both Windows and Linux hosts.

## ON-BOARD PROCESSOR

Many inexpensive CAN interface cards are little more than a PCI Express interface chip and one or more CAN controllers such as the SJA1000 from Philips. Cards such as this provide very little buffering on board and require the host processor to retrieve incoming messages very quickly or data will be lost. Desktop operating systems such as Windows or Linux do not guarantee low latency response to external events, so at times of high bus activity it is common for inexpensive CAN interface cards to lose messages.

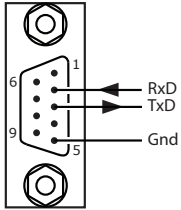
The on-board processor provided on the CAN-PCIe-02 interface card solves this problem by handling each CAN message as it is received and storing them in a large queue. Extended periods of 100% bus utilization can be sustained at maximum bit rate with no loss of data.

ORDERING GUIDE

PART NUMBER	DESCRIPTION
CAN-PCIE-02	Dual-channel CAN interface card for PCI Express sockets

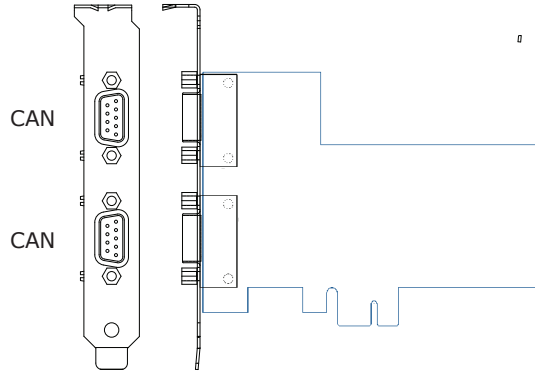
CONNECTOR

Dsub 9M



D-Sub 9M (DTE)

MECHANICAL OUTLINE



SIGNALS & PINS

PIN	SIGNAL
1	N.C.
2	CAN_L
3	CAN_GND
4	N.C.
5	(CAN_SHLD)
6	(GND)
7	CAN_H
8	N.C.
9	(CAN_V+)

SPECIFICATIONS

Hardware requirements	IBM PC or equivalent with PCI Express x1 slot
PCI Interface	PCI Express x1
OS requirements	Windows®, Linux™
CAN channels	2, galvanically isolated
CAN termination	121 Ω each channel, jumper selectable
CAN bit rate	20 kbps to 1000 kbps
CAN connector	Dsub-9M, CAN DS-102 compliant
Timestamp resolution	1 μs
Power requirements	3.3 V from PCIe connector, 180 mA typical
Operating temperature	-10° to +70° C
Storage temperature	-40° to +85 C
Dimensions	4.5 x 3.2 [114 x 81] in [mm]

SOFTWARE

Software, firmware, and drivers listed below are on the Copley Controls web-site:  
<https://www.copleycontrols.com/products/can-pcie-02>

- CAN-PCIE-01, CAN-PCIE-02 User Guide
- CANview for Windows
- CANview for Linux
- API for Windows & Linux
- Firmware
- Drivers for Windows & Linux

16-118684 Document Revision History

Revision	Date	Remarks
00	May 2, 2018	Initial released version