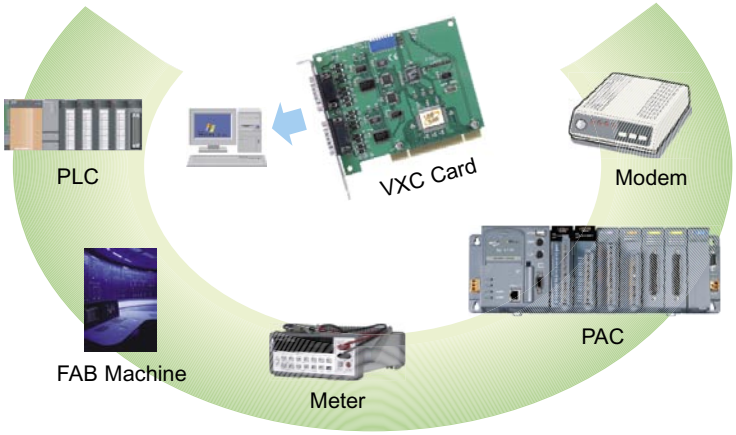
# VXC Multi-port Communication Boards






- Built-in COM-Selector
- Universal PCI (3.3V and 5V)
- Programmable Firmware
- MiniOS7 Inside
- Up to 128KB software FIFO
- Self-tuner Inside
- Surge Protection & Isolation
- Short Card Design
- Various Accessories

## *Overview*

The VXC multi-port serial card enables user to install additional communication ports on the PC. It's the best choice for reliable and time-critical communications and controls on the industrial applications. For example, a host communicates with PLCs, FAB machines, meters, console controller devices, laboratory instruments and modems, etc. , via there ports.

## *Features*

### COM-Selector:

Each VXC series card is equipped with a COM-Selector (dip switches) for the COM port number selection (automatically or manually). It's an important and innovative feature of the VXC cards. It provides the following advantages:

- Simplifies the COM port number selection without using configuration utility programs.
- Users can specify the COM port number of VXC card exactly what they want, no matter which PCI slot it is located.
- Automatically selecting an available COM port number is supported by setting the COM-Selector (dip switch) to 0 (default).
- Does not need to install configuration utility and to study its operation for different OS.
- Prevents confusion. Other PnP COM port devices always confuse users because of adopting the dynamic COM port number setting.
- Replacing an existing card is very easy by setting the dip switches to be the same.
- It's great for mass system installation because setting the dip switches to be the same COM port number is very easy.

### Up To 128KB Software FIFO:

The VXC card driver for Windows features an up to 128KB software FIFO for each port (default is 4KB). It's practical for large file transmission.

### Self-Tuner:

The VXC card is equipped with a "Self-Tuner" chip to control the sending/receiving direction, baud rate, and data format of RS-485 ports automatically. It reduces the software loading for such controls.

### Programmable:

The VXC-114H card is an intelligent and programmable communication board. Users can develop their own powerful and customized firmware with MiniOS7 SDK with ease. This is especially useful for encryption/decryption, data filter, logger, compression, protocol converter, and re-director applications, etc.

### Surge Protection & Isolation:

In the harsh industrial environment, the on board surge protection can protect the computer and equipment from being damaged by the high potential voltage.

### Short Card Design:

The short card design is suitable for compact-size computer, especially for IPC and servers.

### Universal PCI (3.3V and 5V):

The Universal PCI card works with new 3.3V PCI-X bus and 5V PCI bus. The new design of ICPDAS products will have the Universal PCI feature soon.

### Various Accessories:

There are a lot of optional accessories for the VXC cards, such as RS-232/RJ-45 cables and daughter boards. These make wiring very easy.

# PCI Communication Board Selection Guide

## Mulit-port Serial Card Selection Guide

| Model | VXC-112 | VXC-112A | VXC-114H | VXC-142 | VXC-142i | VXC-144 | VXC-182i |
|---|---|---|---|---|---|---|---|
| Bus | Universal PCI | PCI | PCI | PCI | PCI | Universal PCI | PCI |
| COM-Selector | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| RS-232 Ports | 2 | 2 | 4 | - | - | - | 1 |
| RS-422/485 Ports | - | - | - | 2 | 2 Isolated | 4 | 1 Isolated |
| Self-Tuner | - | - | - | Yes | Yes | Yes | Yes |
| Isolation | - | - | - | - | 3KV | - | 3KV |
| Surge Protection | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Max. Speed (bps) | 115.2K | 115.2K | 115.2K | 115.2K | 115.2K | 115.2K | 115.2K |
| Programmable | - | - | Yes | - | - | - | - |
| Microprocessor | - | - | 80186 | - | - | - | - |
| Flash/SRAM (KB) | - | - | 512 / 512 | - | - | - | - |
| Connector | DB9 (Male) | DB9 (Male) | 10-pin RJ-45 | DB9 (Male) | DB9 (Male) | 10-pin RJ-45 | DB9 (Male) |
| Status | Call | Ready | Call | Ready | Ready | Call | Ready |
| Dimensions (mm) | 130 x 105 | 130 x 105 | 130 x 110 | 130 x 105 | 140 x 95 | 130 x 105 | 140 x 95 |
| Page | 1-3 | 1-3 | 1-4 | 1-5 | 1-5 | 1-6 | 1-7 |

## CAN Bus Card Selection Guide

| Model | PISO-CAN200 | PISO-CAN400 | PISO-CM100 | PISO-CPM100 | PISO-DNM100 |
|---|---|---|---|---|---|
| Bus | PCI | PCI | PCI | PCI | PCI |
| CAN Channels | 2 | 4 | 1 | 1 | 1 |
| Isolation | 2.5KV | 2.5KV | 2.5KV | 2.5KV | 2.5KV |
| Max. Speed (bps) | 1M | 1M | 1M | 1M | 500K |
| Microprocessor | - | - | 80186 | 80186 | 80186 |
| Flash/SRAM (KB) | - | - | 512 / 512 | 512 / 512 | 512 / 512 |
| EEPROM | - | - | 2KB | 2KB | 2KB |
| Real-Time Clock | - | - | Yes | Yes | Yes |
| Firmware | - | - | User Design | CANopen | DeviceNet |
| Connector | DB9 (Male) / Screw Terminal | DB9 (Male) / Screw Terminal | DB9 (Male) / Screw Terminal | DB9 (Male) / Screw Terminal | DB9 (Male) / Screw Terminal |
| Status | Ready | Ready | Call | Call | Call |
| Dimensions (mm) | 130 x 110 | 130 x 110 | 130 x 110 | 130 x 110 | 130 x 110 |
| Page | 1-8 | 1-9 | 1-10 | 1-11 | 1-12 |

## PCI Communication Board

# VXC-112 / VXC-112A

### VXC-112: Universal PCI Bus, 2-port RS-232 Communication Board
### VXC-112A: PCI Bus, 2-port RS-232 Communication Board

**VXC-112**

COM-Selector
Universal PCI
Short Card

**VXC-112A**

COM-Selector
Short Card

## Advantages

- Built-in COM-Selector
- Universal PCI (3.3V and 5V) for VXC-112
- Up to 128KB software FIFO for each COM port under Windows
- Short Card Design
- Stop bit: 1, 1.5, 2

## Features

- Supports Universal PCI bus (VXC-112), Plug and Play
- Provides 2-port RS-232
- Provides surge protection
- LED diagnostic indicators
- DOS, Windows NT/2K/XP/2003 and Linux driver supported

## Functional Description

The VXC-112/VXC-112A communication card provides 2 independent RS-232 serial ports. Each port can works for full-duplex communication.

The user can select a specified COM port number manually by setting dip switches, or let the driver to choose an available number automatically. The driver provides an up to 128KB software FIFO for each COM port under Windows. It's practical for large file transmission.

In the harsh industrial environment, the on board surge protection can protect the computer and equipment from being damaged by high potential voltages.

## Specifications

- Universal PCI, 5V and 3.3V, 32-bit 33MHz for VXC-112
- PCI bus, 5V, 32-bit 33MHz for VXC-112A
- Plug and Play mechanism
- Number of ports: 2
- Interface: 2-port RS-232 (9-pin)
- UART: 16C550 compatible
  Speed: 50~115200 bps
  Data bit: 5, 6, 7, 8
  Stop bit: 1, 1.5, 2
  Parity: None, Even, Odd, Mark, Space
  FIFO: Internal 16 bytes
- Connector: 2 x DB9 (Male)

### General Specifications

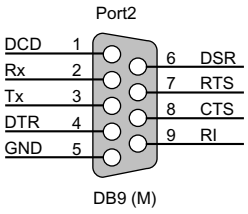
- Operating temperature: 0 ~ 60°C
- Operating humidity: 10 ~ 90% non-condensing
- Storage temperature: -20 ~ 70°C
- Storage humidity: 5 ~ 95% non-condensing
- Dimensions: 130 mm x 105 mm

## Software

- DOS Lib
- Driver for Windows NT 4.0
- Driver for Windows 2000/XP/2003
- Driver for Linux

## Pin Assignment

### RS-232 Cable wiring




## Ordering Information

### Standard

**VXC-112:** Universal PCI bus, 2-port RS-232 communication board

**VXC-112A:** PCI bus, 2-port RS-232 communication board

### Optional

**CA-0910F:** 9-pin Female-Female D-sub Cable, 1.0m

**CA-0915:** 9-pin Male-Female D-sub cable, 1.5m

**CA-PC09F:** 9-pin Female D-sub connector with plastic cover

**DN-09-2F:** I/O Connector Block with DIN-Rail Mounting and two 9-pin Male Headers. There are CA-0910F x 2 (9-pin Female-Female D-sub Cable, 1.0m) included.

# VXC-114H

## PCI bus, Intelligent 4-port RS-232 Communication Board



COM-Selector
MiniOS7 Inside
Programmable
Short Card

VXC-114H

### Advantages

- Built-in COM-Selector
- MiniOS7 Inside (DOS like OS)
- Programmable firmware with SDK
- Up to 100KB software FIFO for each COM port under MiniOS7
- Up to 128KB software FIFO for each COM port under Windows
- Short Card Design
- Built-in Watchdog protection

### Features

- PCI Bus, Plug & Play
- RS-232 firmware inside
- Microprocessor: 16-bit 80186, 80Mhz.
- On board memory: 512KB SRAM, 512KB Flash
- PCI interface with high speed 1KB DPRAM memory mapping
- 4 full-duplex RS-232 ports
- EEPROM: 2K bytes
- UART FIFO: 64 bytes

### Functional Description

The VXC-114H intelligent communication board provides 4 independent and full-duplex RS-232 serial ports. It features a 16-bit 80186-80 CPU, 1KB Dual-port RAM, 512KB Flash, 512KB SRAM, MiniOS7 operating system and built-in communication firmware. Those features effectively reduce the CPU loading of PC when communicating in high speed.

Based on our SDK, the user can develop his own firmware for the VXC-114H to create special functions such as data filter, logger, compression, re-director, 1-to-M broadcaster, encryption/decryption, and protocol converter, etc.

In addition, the user can select a specified COM port number manually by setting dip switches, or let the driver to choose an available number automatically. The driver provides an up to128KB software FIFO for each COM port under Windows. It's practical for large file transmission.

### Software

- Firmware SDK for MiniOS7 (DOS like)
- COM port driver for Windows NT 4.0
- COM port driver for Windows 2000/XP/Net
- tty device driver for Linux

### Specifications

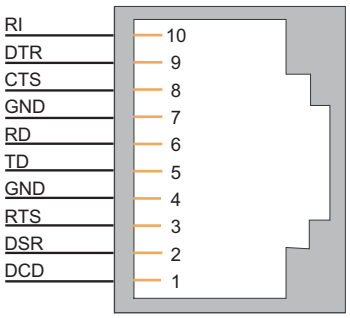
- PCI bus (V2.1), 5V, 33MHz, 32-bit, Plug and Play mechanism
- Interface: 4 ports RS-232 with TXD, RXD, RTS, CTS, DSR, DTR, DCD, RI, and GND pins
- Connector: 10-pin female RJ-45 jack
- UART: 16C550 compatible
  - Speed: 110 ~ 115200 bps
  - Data bit: 5, 6, 7, 8
  - Parity: None, Odd, Even, Mark, Space
  - Stop bit: 1, 1.5, 2
  - FIFO: Internal 64 bytes

#### General Specifications

- Operating temperature: 0 ~ 60°C
- Operating humidity: 10 ~ 90% non-condensing
- Storage temperature: -20 ~ 70°C
- Storage humidity: 5 ~ 95% non-condensing
- Power consumption: 1W
- Dimensions: 130 mm x 105 mm

### Pin Assignment

#### RJ-45 Port1~4




### Ordering Information

#### Standard

**VXC-114H:** PCI bus, intelligent 4-port RS-232 communication board

#### Optional

**CA-RJ0903:** 9-pin Male D-sub & 10-Pin RJ-45, 30cm
**CA-RJ1003:** 10-pin & RJ-45, 30cm Cable

## PCI Communication Board

# VXC-142 / VXC-142i

### VXC-142: PCI Bus, 2-port RS-422/485 Communication Board
### VXC-142i: PCI Bus, 2-port Isolated RS-422/485 Communication Board

**VXC-142**

COM-Selector

Self-Tuner

**VXC-142i**

COM-Selector

Self-Tuner

Isolated

## Advantages

- Built-in COM-Selector
- Self-Tuner Inside
- 3KV Isolated ports for VXC-142i
- Up to 128KB software FIFO for each COM port under Windows
- Short Card Design

## Features

- Supports PCI bus, Plug and Play
- Provides 2-port RS-422/485
- Provides surge protection
- LED diagnostic indicators
- DOS, Windows NT/2K/XP/2003 and Linux driver supported

## Functional Description

The VXC-142 card provides 2 independent RS-422/RS-485 serial ports, while the VXC-142i card provides isolated ones. Each port can be configured as either RS-485 for half-duplex or RS-422 for full-duplex communication.

The user can select a specified COM port number manually by setting dip switch, or let the driver to choose an available number automatically. The driver provides an up to 128KB software FIFO for each COM port under Windows. It's practical for large file transmission.

In the harsh industrial environment, the on board surge protection can protect the computer and equipment from being damaged by high potential voltage.

## Specifications

- PCI (v2.1), 5V, 33MHz, 32-bit, Plug and Play mechanism
- Number of ports: 2
- Interface:
  Non-isolated RS-422/RS-485 for VXC-142
  Isolated RS-422/RS-485 for VXC-142i
- UART: 16C550 compatible
  Speed: 50~115200 bps
  Data bit: 5, 6, 7, 8
  Stop bit: 1, 1.5, 2
  Parity: None, Even, Odd, Mark, Space
  FIFO: Internal 16 bytes
- Connector: 2 x DB9 (Male)

### General Specifications

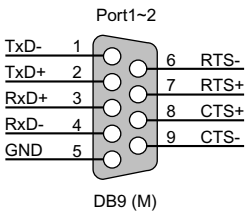
- Operating temperature: 0 ~ 60°C
- Operating humidity: 10 ~ 90% non-condensing
- Storage temperature: -20 ~ 70
- Storage humidity: 5 ~ 95% non-condensing
- Dimensions: 130 mm x 105 mm (VXC-142)
  140 mm x 95 mm (VXC-142i)

## Software

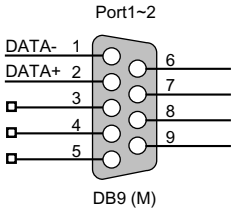
- DOS Lib
- Driver for Windows NT 4.0
- Driver for Windows 2000/XP/2003
- Driver for Linux

## Pin Assignment

### RS-422 Cable wiring




### RS-485 Cable wiring




## Ordering Information

### Standard

**VXC-142:** PCI bus, 2-port RS-422/485 communication board

**VXC-142i:** PCI bus, 2-port isolated RS-422/485 communication board

### Optional

**CA-090910:** 9-pin Female D-sub cable for RS-422 Connector, 1m

**CA-0910F:** 9-pin Female-Female D-sub Cable, 1m

**CA-0915:** 9-pin Male-Female D-sub cable, 1.5m

**CA-PC09F:** 9-pin Female D-sub connector with plastic cover

**DN-09-2F:** I/O Connector Block with DIN-Rail Mounting and two 9-pin Male Header. There are CA-0910F x 2 (9-pin Female-Female D-sub Cable, 1m) included.

# VXC-144

## Universal PCI bus, 4-port RS-422/485 Communication Board




VXC-144

### Advantages

- Built-in COM-Selector
- Universal PCI (3.3V and 5V)
- Self-Tuner Inside
- Up to 128KB software FIFO for each COM port under Windows
- Short Card Design

### Features

- Supports Universal PCI bus, Plug and Play
- Provides 4-port RS-422/RS-485
- Provides surge protection
- LED diagnostic indicators
- DOS, Windows NT/2K/XP/2003 and Linux driver supported

### Functional Description

The VXC-144 card provides 4 independent RS-422/RS-485 serial ports. Each port can be configured as either RS-485 for half-duplex or RS-422 for full-duplex communication. It offers speed up to 115.2Kps and long distance communication link.

The user can select a specified COM port number manually by setting dip switches, or let the driver to choose an available number automatically. The driver provides an up to 128KB software FIFO for each COM port under Windows. It's practical for large file transmission.

In the harsh industrial environment, the on board surge protection can protect the computer and equipment from being damaged by high potential voltage.

### Applications

- Industrial Machinery
- Building Automation
- Restaurant Appliances
- Laboratory Equipment & Research
- Industrial Communication

### Specifications

- Universal PCI, 3.3V and 5V, 33MHz, 32-bit, Plug and Play mechanism
- Number of ports: 4
- Interface: Non-isolated RS-422/485
- UART: 16C550 compatible
  Speed: 50~115200 bps
  Data bit: 5, 6, 7, 8
  Stop bit: 1, 1.5, 2
  Parity: None, Even, Odd, Mark, Space
  FIFO: Internal 16 bytes
  Connector: 10-pin female RJ-45 Jack

### General Specifications

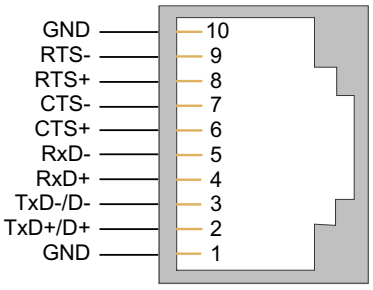
- Operating temperature: 0 ~ 60°C
- Operating humidity: 10 ~ 90% non-condensing
- Storage temperature: -20 ~ 70°C
- Storage humidity: 5 ~ 95% non-condensing
- Dimensions: 130 mm x 105 mm

### Software

- DOS Lib
- Driver for Windows NT 4.0
- Driver for Windows 2000/XP/2003
- Driver for Linux

### Pin Assignment

RJ-45 Port1~4




### Ordering Information

*Standard*

**VXC-144:** PCI bus, 4-port RS-422/485 communication board

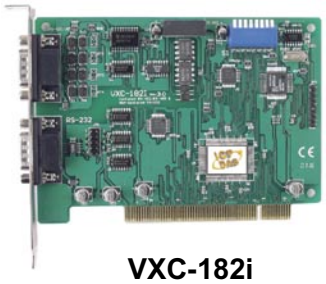
*Optional*

**CA-RJ1003:** 10-pin & RJ-45, 30cm Cable

## PCI Communication Board

# VXC-182i

## PCI Bus, 1-Port Isolated RS-422/485 and 1-Port RS-232 Communication Board




VXC-182i

### Advantages

- Built-in COM-Selector
- Self-Tuner inside
- 3KV isolated RS-422/485 port
- Up to 128KB software FIFO for each COM port under Windows
- Short Card Design

### Features

- Supports PCI bus, Plug and Play
- Provides 1 isolated RS-422/485 port and 1 RS-232 port
- Provides surge protection
- LED diagnostic indicators
- DOS, Windows NT/2K/XP/2003 and Linux driver supported

### Functional Description

The VXC-182i card provides one isolated RS-422/RS-485 port and one RS-232 port. The first one can be configured as either RS-485 for half-duplex or RS-422 for full-duplex communication.

The user can select a specified COM port number manually by setting dip switches, or let the driver to choose an available number automatically. The driver provides up to 128KB software FIFO for each COM port under Windows. It's practical for large file transmission.

In the harsh industrial environment, the on board surge protection can protect the computer and equipment from being damaged by high potential voltage.

### Specifications

- PCI (v2.1), 5V, 33MHz, 32-bit, Plug and Play mechanism
- Number of ports: 2
- Interface:
  1 isolated RS-422/485 port
  1 independent RS-232 port
- UART: 16C550 compatible
  Speed: 50~115200 bps
  Data bit: 5, 6, 7, 8
  Stop bit: 1, 1.5, 2
  Parity: None, Even, Odd, Mark, Space
  FIFO: Internal 16 bytes
- Connector: 2 x DB9 (Male)

#### General Specifications

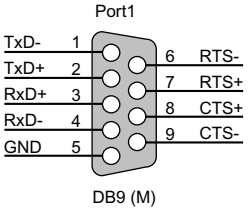
- Operating temperature: 0 ~ 60°C
- Operating humidity: 10 ~ 90% non-condensing
- Storage temperature: -20 ~ 70°C
- Storage humidity: 5 ~ 95% non-condensing
- Dimensions: 140 mm x 95 mm

### Software

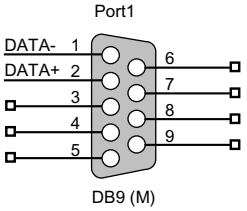
- DOS Lib
- Driver for Windows NT 4.0
- Driver for Windows 2000/XP/2003
- Driver for Linux

### Pin Assignment

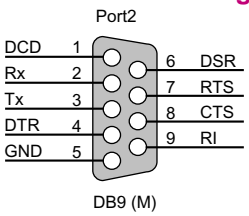
#### RS-422 Cable wiring




#### RS-485 Cable wiring




#### RS-232 Cable wiring




### Ordering Information

#### Standard

**VXC-182i:** PCI bus, 1-port isolated RS-422/485 and 1-port RS-232 communication board

#### Optional

**CA-090910:** 9-pin Female D-sub cable for RS-422 Connector, 1m
**CA-0910F:** 9-pin Female-Female D-sub Cable, 1m
**CA-0915:** 9-pin Male-Female D-sub cable, 1.5m
**CA-PC09F:** 9-pin Female D-sub connector with plastic cover
**DN-09-2F:** I/O Connector Block with DIN-Rail Mounting and two 9-pin Male Headers. There are CA-0910F x 2 (9-pin Female-Female D-sub Cable 1m) included.

# PISO-CAN200

## Isolated 2-port CAN bus communication board



PISO-CAN200-D

PISO-CAN200-T

### Features

- Two independent CAN bus 2.0A/2.0B communication ports
- Compatible with CAN specification 2.0 parts A and B
- On-board optical isolators protection
- Programmable transfer rate up to 1 Mbps.
- Jumper-selected 120Ω terminator resistor for each port
- Direct memory mapping to the CAN controllers
- 33MHz 32-bit 5V PCI bus (V2.1) plug and play

### Functional Description

The CAN (Controller Area Network) is a serial communication network and efficiently supports distributed real-time control with a very high level of security. It is especially suited for networking "intelligent" devices, sensors, and actuators within a system or sub-system. In CAN networks, there is no addressing of subscribers or stations in the conventional sense, but the prioritized messages are transmitted instead. As a standalone CAN controller, PISO-CAN200 is an active CAN board with two independent CAN bus communication ports which is equipped with 5-pin screw terminal connector or 9-pin D-sub connector. It covers a wide range of CAN applications and is economic. Besides, PISO-CAN200 uses the new Phillips SJA1000T controller and 82C250/251 transceiver to provide bus arbitration and error detection with auto correction and re-transmission function. It can be installed in a 5V PCI slot and support truly "Plug & Play".

### Applications

- DeviceNet, CANopen, CAN J1939, SDS (System Wide Network) protocol application
- CAN bus communication application
- Industry automation
- Semiconductor fabrication application
- Building automation
- Industrial machine control
- High-speed assembly application

### Specifications

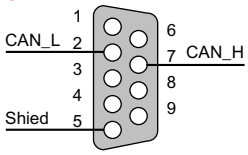
- CAN controller: Phillip SJA1000T
- CAN transceiver: Phillip 82C250/251
- Signal support: CAN_H, CAN_L
- 16 MHz CAN controller frequency
- Connector: 5-pin screw terminal connector or 9-pin D-sub connector
- Isolation voltage: 2500Vrms

**General Specifications**

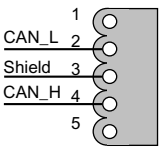
- Operating temperature: 0°C ~ 60°C
- Operating humidity: 10 ~ 90% non-condensing
- Storage temperature: -20 ~ 70°C
- Storage humidity: 5 ~ 95% non-condensing
- Dimensions: 130 mm x 110 mm

### Pin Assignment

**9-pin D-sub connector**




**5-pin Screw Terminal connector**




### Ordering Information

**PISO-CAN200-D:** Isolated 2-port CAN bus communication board with 9-pin D-sub connector

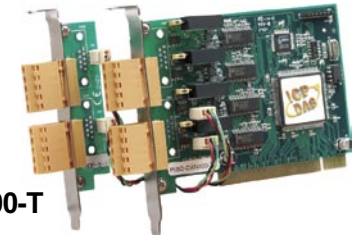
**PISO-CAN200-T:** Isolated 2-port CAN bus communication board with 5-pin screw terminal connector

## CAN Communication Board

# PISO-CAN400

### Isolated 4-port CAN bus communication board

PISO-CAN400-D



PISO-CAN400-T

### Features

- Four independent CAN bus 2.0A/2.0B communication ports
- Compatible with CAN specification 2.0 parts A and B
- On-board optical isolators protection
- Programmable transfer rate up to 1 Mbps.
- Jumper-selected 120Ω terminator resistor for each port
- Direct memory mapping to the CAN controllers
- 33MHz 32-bit 5V PCI bus (V2.1) plug and play

### Functional Description

The CAN (Controller Area Network) is a serial communication network and efficiently supports distributed real-time control with a very high level of security. It is especially suited for networking "intelligent" devices, sensors, and actuators within a system or sub-system. In CAN networks, there is no addressing of subscribers or stations in the conventional sense, but the prioritized messages are transmitted instead. As a standalone CAN controller, PISO-CAN400 is an active CAN board with two and four independent CAN bus communication ports which is equipped with 5-pin screw terminal connector or 9-pin D-sub connector. It covers a wide range of CAN applications and is economic. Besides, PISO-CAN400 uses the new Phillips SJA1000T controller and 82C250/251 transceiver to provide bus arbitration and error detection with auto correction and re-transmission function. It can be installed in a 5V PCI slot and support truly "Plug & Play".

### Applications

- DeviceNet, CANopen, CAN J1939, SDS (System Wide Network) protocol application
- CAN bus communication application
- Industry automation
- Semiconductor fabrication application
- Building automation
- Industrial machine control
- High-speed assembly application

### Specifications

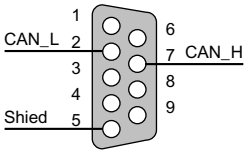
- CAN controller: Phillip SJA1000T
- CAN transceiver: Phillip 82C250/251
- Signal support: CAN_H, CAN_L
- 16 MHz CAN controller frequency
- Connector: 5-pin screw terminal connector or 9-pin D-sub connector
- Isolation voltage: 2500Vrms

#### General Specifications

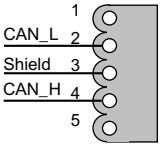
- Operating temperature: 0°C ~ 60°C
- Operating humidity: 10 ~ 90% non-condensing
- Storage temperature: -20 ~ 70°C
- Storage humidity: 5 ~ 95% non-condensing
- Dimensions:130 mm x 110 mm

### Pin Assignment

#### 9-pin D-sub connector




#### 5-pin Screw Terminal connector




### Ordering Information

**PISO-CAN400-D:** Isolated 4-port CAN bus communication board with 9-pin D-sub connector

**PISO-CAN400-T:** Isolated 4-port CAN bus communication board with 5-pin screw terminal connector

# PISO-CM100

## Standalone intelligent CAN bus communication board



PISO-CM100-D

PISO-CM100-T

### Features

- Micro controller: 80186, 80Mhz.
- CAN interface: one separate network interfaces based on the CAN 2.0B/2.0A specification with CAN controller SJA 1000
- CAN bus driver: 1 high-speed CAN interface, programmable transfer rate up to 1 Mbit/s On-board memory: 512K bytes SRAM, 512K bytes
- Flash ROM
- CAN bus interface: ISO/IS 11898-2, Sub D9 connector according to DS 102, On-board optical isolators protection
- PCI interface with DPRAM memory automatic assignment
- Jumper-selected 120Ω terminator resistor for each port
- 33MHz 32-bit 5V PCI bus (V2.1) plug & play

### Functional Description

The CAN (Controller Area Network) is a serial communication network and efficiently supports distributed real-time control with a very high level of security. It is especially suited for networking "intelligent" devices, sensors, actuators within a system or sub-system. In CAN networks, there is no addressing of subscribers or stations in the conventional sense, but the prioritized messages are transmitted instead.

The PISO-CM100 is a very powerful and economic solution for a wide range of CAN applications. It is an active CAN board with one CAN channel. The 16-bit on-board microcontroller allows the filtering, preprocessing, and storage (with timestamp) of CAN messages as well as the real-time transmission of CAN messages. PISO-CM100 also uses the new Phillips SJA1000T controller and 82C250/251 transceiver to provide bus arbitration and error detection with auto correction and re-transmission function. Under the effect of the powerful microcontroller this card can be made for one or two CAN controllers simultaneously without losing any data, even in systems with a high bus load. Besides, equipped with integrated intelligence, the PISO-CM100 makes it possible to preprocess and buffer CAN data streams, thus relieving a considerable burden of the PC. As a result, the real-time requirements on the PC applications are drastically reduced. Due to the state-of-the-art design, it can be installed in a slot of 32-bit 5V PCI bus and supports the truly "Plug & Play" technology.

### Applications

- DeviceNet, CANopen, CAN J1939, SDS (System Wide Network) protocol Application
- CAN Bus Communication Application
- Industry Automation
- Semiconductor fabrication application
- Building automation
- Industrial machine control
- High-speed assembly application

### Specifications

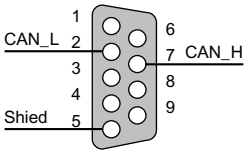
- CAN controller: Phillip SJA1000T
- CAN transceiver: Phillip 82C250/251
- Signal support: CAN_H, CAN_L
- 16 MHz CAN controller frequency
- Connector: 5-pin screw terminal connector or 9-pin D-sub connector
- Isolation voltage: 2500Vrms

#### General Specifications

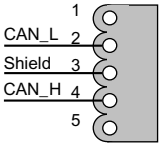
- Operating temperature: 0 ~ 60°C
- Operating humidity: 10 ~ 90% non-condensing
- Storage temperature: -20 ~ 70°C
- Storage humidity: 5 ~ 95% non-condensing
- Dimensions: 130 mm x 110 mm

### Pin Assignment

**9-pin D-sub connector**




**5-pin Screw Terminal connector**




### Ordering Information

**PISO-CM100-D:** One standalone intelligent CAN communication board with 9-pin D-sub connector

**PISO-CM100-T:** One standalone intelligent CAN communication board with 5-pin screw terminal connector

## CAN Communication Board

# PISO-CPM100

### Standalone intelligent CAN bus communication board

PISO-CPM100-D

PISO-CPM100-T

## Firmware Features

- Follow DS301 version 4.01
- NMT master-slave
- SDO client and server
- PDO producer and consumer
- Get protocol states
- Guarding Time and Heartbeat protocol
- Support SYNC message
- Dual Port RAM Access
- Load EDS File
- Selectable data rates (baud rate):10K, 20K, 50K, 125K, 250K, 500K, 800K, 1M bps

## Functional Description

The PIO-CPM100 gives a very powerful and economic solution of an active CANopen master device with one CAN channel. It uses the Phillips SJA1000T and 82C250 as the CAN controller and transceiver, to provide bus arbitration, error detection with auto correction and re-transmission functions. The 16-bit on-board microcontroller with a real-time OS, MiniOS7, allows many features, such as real-time message transmission and reception, filtering, preprocessing, and storage of CAN messages. Under the effect of the powerful microcontroller, this card can be made for one CAN controllers without losing data, even in systems with a high PCI bus load. Therefore, the CANopen critical process can be implemented directly by CANopen firmware in the PISO-CPM100. In addition, users can develop their CANopen application by using the CANopen library. When the PISO-CPM100 is active, the data exchange between users' applications and CANopen firmware is performed via the memory mapping method.

## Applications

- Industrial Machinery
- Building Automation
- Packaging
- Restaurant Appliances
- Laboratory Equipment & Research

## Hardware Features

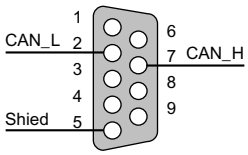
- Microprocessor: 80186, 80Mhz.
- CAN interface: 1 or 2 separate network interfaces based on the CAN 2.0A/2.0B specification with CAN controller SJA 1000.
- CAN bus driver: 1 or 2 CAN high-speed interfaces in accordance with ISO 11898 by programmable transfer rate up to 1 Mbit/s.
- On board memory: 512K bytes SRAM, 512K bytes FLASH ROM.
- CAN bus interface :ISO/IS 11898-2, Sub D9 connector or 5-pin screw terminal with on-board optical isolators protection.
- PCI interface with DPRAM memory automatic assignment.
- Jumper select 120Ω terminator resistor for each port.
- 33MHz 32bit 5V PCI bus (V2.1) plug and play.
- CAN controller: Phillip SJA1000T
- CAN transceiver: Phillip 82C250/251
- Signal support: CAN_H, CAN_L
- 16 MHz CAN controller frequency
- Connector: 5-pin screw terminal connector or 9-pin D-sub connector
- Isolation voltage: 2500Vrms

### General Specifications

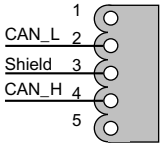
- Operating temperature: 0 ~ 60°C
- Operating humidity: 10 ~ 90% non-condensing
- Storage temperature: -20 ~ 70°C
- Storage humidity: 5 ~ 95% non-condensing
- Dimensions: 130 mm x 110 mm

## Pin Assignment

**9-pin D-sub connector**




**5-pin Screw Terminal connector**




## Ordering Information

**PISO-CPM100-D:** CANopen firmware inside and one standalone intelligent CAN communication board with D-sub 9-pin connector

**PISO-CPM100-T:** CANopen firmware inside and One standalone intelligent CAN communication board with 5-pin screw terminal connector

# PISO-DNM100

## Standalone intelligent CAN bus communication board



PISO-DNM100-D

PISO-DNM100-T

### Functional Description

The PIO-DNM100 gives a very powerful and economic solution of an active DeviceNet master device with one CAN channel. It uses the Phillips SJA1000T and 82C250 as the CAN controller and transceiver, to provide bus arbitration, error detection with auto correction and re-transmission function. The 16-bit on-board microcontroller allows, among many other features, the filtering, preprocessing, and storage (with timestamp) of CAN messages as well as the real-time transmission of DeviceNet messages. Under the effect of the powerful microcontroller, this card can be made for one CAN controllers without losing data, even in systems with a high PCI bus load. Therefore, the DeviceNet critical process can be implemented directly by DeviceNet firmware in the PISO-DNM100. In addition, users can development their DeviceNet applications by using the DeviceNet library. Therefore, users can apply the PISO-DNM100 PCI card to build a rapid, powerful and economic DeviceNet application.

### Applications

- Automotive
- Food & Beverage
- Material Handling
- Packaging
- High-speed Assembly
- Semiconductor Fabrication
- Control system

### Hardware Features

- Microprocessor: 80186, 80Mhz.
- CAN interface: 1 or 2 separate network interfaces based on the CAN 2.0A/2.0B specification with CAN controller SJA 1000.
- CAN bus driver: 1 or 2 CAN high-speed interfaces in accordance with ISO 11898 by programmable transfer rate up to 1 Mbit/s.
- On board memory: 512K Byte SRAM, 512K byte FLASH ROM.

### Firmware Features

- Explicit messaging, polling, change of state, bit strobe and cyclic connections
- Direct access to the process data in the dual-port memory
- Get Protocol States
- Messaging to pre-defined master/slave connection set
- Selectable data rates: 125K, 250K, 500K bps
- Simultaneous execution of Group 2 Client (master) and Server (slave) operation
- Load EDS file

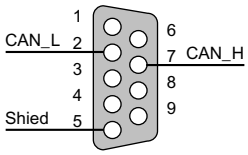
- CAN bus interface :ISO/IS 11898-2, Sub D9 connector or 5-pin screw terminal with on-board optical isolators protection.
- PCI interface with DPRAM memory automatic assignment.
- Jumper select 120Ω terminator resistor for each port.
- 33MHz 32bit 5V PCI bus (V2.1) plug and play.
- CAN controller: Phillip SJA1000T
- CAN transceiver: Phillip 82C250/251
- Signal support: CAN_H, CAN_L
- 16 MHz CAN controller frequency
- Connector: 5-pin screw terminal connector or 9-pin D-sub connector
- Isolation voltage: 2500Vrms

### General Specifications

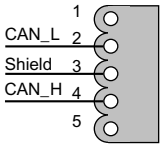
- Operating temperature: 0 ~ 60°C
- Operating humidity: 10 ~ 90% non-condensing
- Storage temperature: -20 ~ 70°C
- Storage humidity: 5 ~ 95% non-condensing
- Dimensions: 130 mm x 110 mm

### Pin Assignment

**9-pin D-sub connector**




**5-pin Screw Terminal connector**




### Ordering Information

**PISO-DNM100-D:** DeviceNet firmware inside and one standalone intelligent CAN Communication Board with D-sub 9-pin connector

**PISO-DNM100-T:** DeviceNet firmware inside and One standalone intelligent CAN Communication Board with 5-pin screw terminal connector

## Communication Board

# PCI-488/PC-488

### PCI/ISA bus IEEE 488 board

PCI-488

PC-488

## Features

- Faster data transfers
- Complete IEEE 488.2 compatibility
- Compatible software for easy upgrade
- Compatible with LabWindows, LabVIEW, Testpoint, hpVEE...etc.

## Functional Description

The PC-488 and PCI-488 provide the IEEE 488 interfaces for PC/XT/AT and PCI bus computers. All boards are fully compliant with the IEEE 488.2 specifications and can connect all IEEE 488 compliant instruments.

## PCI-488

### Hardware

PCI-488 works in any computer with one or more PCI slots and controls all IEEE 488, GPIB and HP-IB instruments. PCI-488 implements all required and optional features of the IEEE 488.2 standard in controller or device mode as a talker a listener. PCI-488 hardware is 100% compatible with our other IEEE 488 cards which are running on existing applications.

### Software

PCI Plug-and Plug software with auto-addressing provides instant-on switch with less configuration. All IEEE 488.2 functions and commands are supported. These include listen, talk, device clear, group execute trigger, go to local, interface clear, local lockout, parallel poll configure or disable, remote enable, selected device clear, serial poll, pass control, unlisted and untack.

### Support Languages

Basic, Qbasic, Quickbasic, VISUAL BASIC for DOS & Windows, Delphi,C, C++, Visual C/C++, Watcom C, Fortran, hpVEE, LabVIEW, TESTPOINT...etc.

### Additional Features

- Parallel port emulation
- Serial port emulation
- IEEE 488.2 subroutines
- Interactive test utility
- IEEE 488 debug utility
- Data transfer between computers
- Device emulation
- Hardware diagnostics
- Example program library
- Macro command support
- Fast array transfer

## Applications

- Laboratory automation
- Automated production test

## Specifications

- Up to 14 devices can be connected
- Data transfer rate up to 1M bytes/s
- Follow IEEE 488, IEEE 488.1, IEEE 488.2, SCPI
- Dimensions: 140 mm x 100 mm (PCI-488)
  130 mm x 85 mm (PC-488)

## Ordering Information

*Standard*

**PC-488 :** ISA Bus IEEE 488 Board
**PCI-488 :** PCI Bus IEEE 488 Board

*Optional*

**CA-GPIB10:** IEEE 488 Cable, 1m
**CA-GPIB20:** IEEE 488 Cable, 2m
**CA-GPIB40:** IEEE 488 Cable, 4m

# USB-488

## GPIB Universal Serial Bus (USB) Controller




USB-488

### Features

- Parallel and serial ports emulation
- IEEE 488.2 subroutines
- Interactive test utility (DOS and Windows)
- Support device emulation
- Hardware diagnostics
- Example program library
- Macro command support

### Functional Description

The USB-488 uses the USB port of a PC to provide an IEEE 488.2 interface for GPIB instruments. The compact size of USB-488 makes it ideal for portable applications for notebook PCs as well as applications for the desk-top computers with a USB port.

The USB-488 is easy to install. The Plug & Play feature let your Windows 2000/XP/ME/98 computers recognize the IEEE 488.2 interface as soon as you attach it to USB port. This product implements all required and optional features of the IEEE 488.2 specification in controller or device mode as a talker or a listener. It is fully compatible with existing applications running on your other IEEE 488 control cards. Drawing power from the USB port so it does not need external power supply.

USB-488 is easy to use in programming. Abundant practical examples that let you complete data acquisition, measurement and analysis tasks faster than ever before. The hardware, software and documentation have all been carefully designed or written to increase your productivity.

#### Hardware

USB-488 works in any computer with one or more USB ports and controls all IEEE 488, GPIB and HP-IB instruments. PCI-488 implements all the required and optional features of IEEE 488.2 standard in controller or device mode as a talker or a listener. PCI-488 hardware is 100% compatible with existing applications currently running on our other IEEE 488 cards.

#### Software

USB Plug & Plug software with auto-addressing provides instant-on switch with less configuration. All IEEE 488.2 functions and commands are supported. These include listen, talk, device clear, group execute trigger, go to local, interface clear, local lockout, parallel poll configure or disable, remote enable, selected device clear, serial poll, pass control, unlisten, and untalk.

#### Support Languages

BASIC, QBASIC, Professional BASIC7, QuickBASIC, Visual BASIC for DOS and Windows, Quick Pascal, Turbo Pascal, Delphi, Quick C for DOS and Windows, C, C++, Visual C/C++, Watcom C, Fortran, TestPoint, hpVEE, LabVIEW, LabWindows CVI.

### Specifications

- I/O Connectors
  USB : USB standard series B plug
  GPIB: IEEE 488 standard 24 pins
- Comes with built-in 2-meter cable
- Operating Environment
  Temperature: 0 ~ 55°C
  Relative humidity: 10 ~ 90%, non-condensing
- Storage Environment
  Temperature: -20 ~ 70°C
  Relative humidity: 5 ~ 95%, non-condensing

### Ordering Information

*Standard*

**USB-488 :** USB IEEE 488 controller by the USB port