
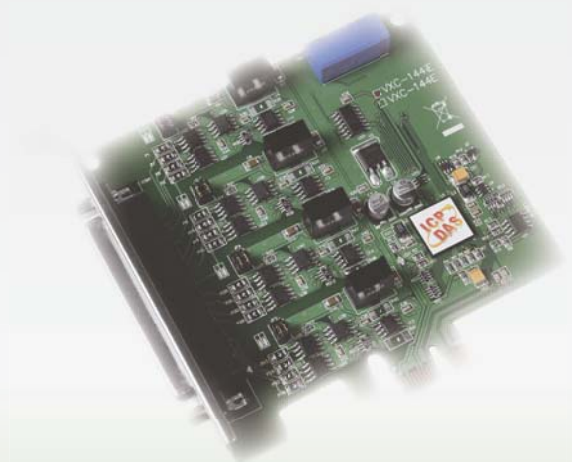


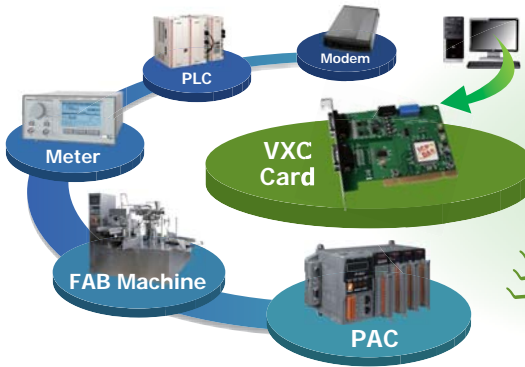
Multi-port Serial Cards

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2.1. Overview



- The VXC Family--Multi-port Serial Card*
- ✓ Built-in COM-Selector
 - ✓ Universal PCI (3.3 V and 5 V)
 - ✓ PCI Express
 - ✓ COM port buffer up to 128 KB
 - ✓ Hardware FIFO up to 128 bytes
 - ✓ Self-Tuner Inside
 - ✓ ESD Protection & Isolation
 - ✓ Short Card Design
 - ✓ Various Accessories

Overview

The VXC multi-port serial card enables user to increase additional communication ports on PCs. It's the on-top-of-the-list choice while you are managing to connect lots of outer devices through your PC; every VXC card ensures you smooth communication in both time-critical applications and industrial fields. With simply a VXC card, it has never been that easy to integrate a PC with lots of devices, such as PLCs, FAB machines, meters, controller devices, laboratory instruments, modems, card readers, serial printers, RFID readers, bar code readers, sensors, etc.

Features

COM-Selector

Each VXC card is equipped with a COM-Selector (DIP Switch) for the COM port number selection (automatically or manually). It's an important and innovative feature for the VXC family.

The COM-Selector provides the following advantages:

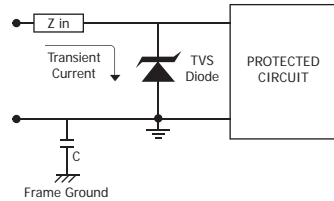
- ◆ Simplifies the COM port number selection; no configuration utility programs needed.
- ◆ Users can specify the COM port number of the VXC card as exactly what they want, no matter which PCI slot it is located at.
- ◆ Automatically selecting an available COM port number is supported by setting the COM-Selector (DIP switch) to 0 (default).
- ◆ No need to install configuration utility and to study its operation for different OS.
- ◆ Prevents confusion. Other PnP COM port devices easily confuse users because of adopting the dynamic COM port number setting.
- ◆ Easy replacement of an existing card by setting the DIP switch to be the same COM port number.
- ◆ Great for mass system installation; since setting the DIP switch to be the same COM port number is very easy.



Easy COM Port Selection by DIP switch

ESD Protection

The VXC cards offer TVS diode ESD protection technology, protecting your system from being damaged by the high potential voltages.



Under normal operating conditions, the TVS diode presents high impedance (appears as an open circuit) to the protected component. When the voltage is beyond the limits, the TVS diode avalanches providing a low impedance path for the transient current. As a result, the transient current is diverted away from the protected components and shunted through the TVS diode. The device returns to a high impedance state after the transient threat passed.

Self-Tuner

The VXC card is equipped with a "Self-Tuner" chip to control the sending/receiving direction of RS-485 ports automatically.

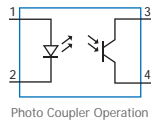
Without the help of Self-Tuner, users need to enable RS-485 transmitter before sending, and disable the transmitter after finishing sending. The timing to enable and disable transmitter (direction control) is the major issue on many communication problems, and it is very difficult to debug.

The built-in Self-Tuner on VXC cards effectively gets rid of this direction control issue and also simplifies software programming for communication applications.

Isolation

Some VXC cards offer photo isolation to protect your computer and equipment against damages in harsh environment.

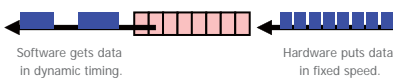
Photo coupler is a device that uses a short optical transmission path to transfer a signal between elements of a circuit, typically a transmitter and a receiver. This keeps them electrically isolated — since the signal goes from an electrical signal to an optical signal, the electrical contact along the path is broken.



It can help cutting down on ground loops, common mode voltages and block voltage spikes, provide electrical isolation, and offer significant protection from serious over-voltage conditions in one circuit affecting the other.

Hardware FIFO up to 128 bytes

FIFO stands for "First In, First Out", an abstraction in ways of organizing and manipulating data relative to time and prioritization. FIFO is used for buffering and flow control while data come from hardware to software. When using hardware FIFO (buffer), a little delay on software or operating system will not lost data at all.



VXC Cards are equipped with 16- or 128-byte hardware FIFO for each port. Large hardware FIFO is useful to prevent data lost when your system works on heavy loading, and even helpful while you are running on a multi-task operating system, such as Windows, Linux... etc.

COM port buffer up to 128 KB

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

Short Card Design

The "Short Card" design is suitable for compact-sized computer, especially for IPC (Industrial Personal Computer) and servers.

Universal PCI (3.3 V and 5 V)

The Universal PCI card works with both new 3.3 V PCI bus that has been widely-used in servers, and traditional 5 V PCI bus. The universal PCI interface will be the standard for every card from ICP DAS in the near future.

PCI Express

PCI Express (PCIe) is a computer expansion card standard. A key difference between PCIe and earlier PC buses is a topology based on point-to-point serial links, rather than a shared parallel bus architecture. Conceptually, the PCIe bus can be thought of as a 'high-speed serial replacement' of the older PCI/PCI-X bus.

Various Accessories

There are a lot of optional accessories for the VXC cards, such as RS-232 cables and daughter boards. These tools make wiring much easier than ever.



DB-9 Cable



DB-9 Daughter Board



DB-9 Cable



DB-37 to 4-port DB-9 Cable



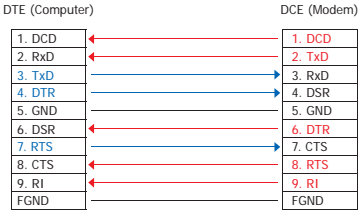
DB-37 Connector



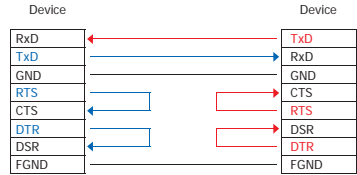
DB-9 Connector

• Wiring Note for RS-232 and RS-422/485 Devices

RS-232 Wiring



9-wire RS-232 Connection (DB-9)

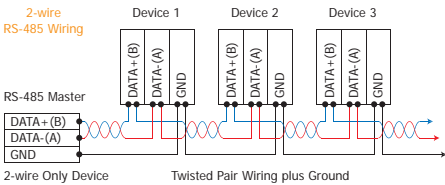


3-wire RS-232 Connection
(Shorts unused signals RTS/CTS, DTR/DSR)

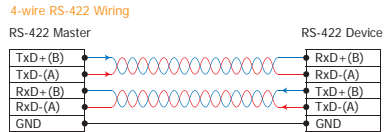
Note:

- For 3-wire RS-232 connections, it is recommended to short unused signals such as RTS/CTS and DTR/DSR, since some system may still check the CTS and DSR status.
- FGND is the frame ground that soldered to DB-9 metal shield.

RS-485 Wiring



RS-422 Wiring



Note:

For RS-422/485 ports, you should connect all signal grounds of RS-422/485 devices together. This reduces common-mode voltage between devices.

● Selection Guide

Model Name	Bus	COM-Selector	RS-232		RS-422/485		Self-Tuner	ESD Protection	Max. Speed (bps)	FIFO Size (bytes)	Connector	Page
			Ports	Isolation	Ports	Isolation						
VXC-112AU	Universal PCI	Yes	2	-	-	-	-	-	115.2 K	128	Male DB-9	2-2-1
VXC-112IAU	Universal PCI	Yes	2	2.5 kV	-	-	-	+/-4 kV	115.2 K	128	Male DB-9	2-2-1
VXC-142AU	Universal PCI	Yes	-	-	2	-	Yes	-	115.2 K	128	Male DB-9	2-2-5
VXC-142IAU	Universal PCI	Yes	-	-	2	2.5 kV	Yes	+/-4 kV	115.2 K	128	Male DB-9	2-2-5
VXC-182IU	Universal PCI	Yes	1	-	1	2.5 kV	Yes	+/-4 kV	115.2 K	128	Male DB-9	2-2-9
VXC-114U	Universal PCI	Yes	4	-	-	-	-	-	115.2 K	128	Female DB-37	2-2-3
VXC-114IAU	Universal PCI	Yes	4	2.5 kV	-	-	-	+/-4 kV	115.2 K	128	Female DB-37	2-2-3
VXC-144U	Universal PCI	Yes	-	-	4	-	Yes	-	115.2 K	128	Female DB-37	2-2-7
VXC-144IU	Universal PCI	Yes	-	-	4	2.5 kV	Yes	+/-4 kV	115.2 K	128	Female DB-37	2-2-7
VEX-114	PCI Express	Yes	4	-	-	-	-	-	115.2 K	128	Female DB-37	2-2-3
VEX-114i	PCI Express	Yes	4	2.5 kV	-	-	-	+/-4 kV	115.2 K	128	Female DB-37	2-2-3
VEX-144	PCI Express	Yes	-	-	4	-	Yes	-	115.2 K	128	Female DB-37	2-2-7
VEX-144i	PCI Express	Yes	-	-	4	2.5 kV	Yes	+/-4 kV	115.2 K	128	Female DB-37	2-2-7

