PCI Express Interface

New Members in I/O Cards (June. 2010)

2010 Product Catalog Vol.IOC1006

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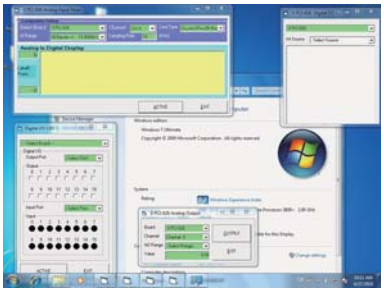
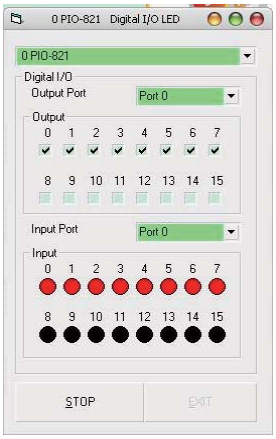
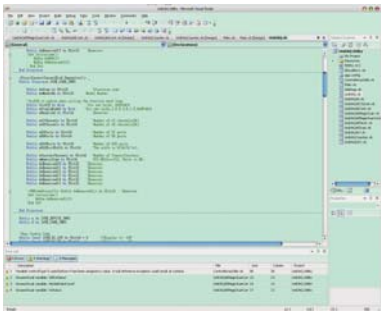
Software

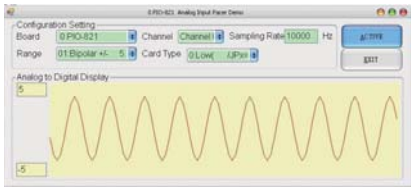
ICP DAS provides SDK and drivers for I/O cards to support various OS such as Linux, DOS, Windows 98/NT4/2000, and 32-/64-bit Windows XP/2003/2008/Vista/7. The Windows SDK for I/O cards contain DLL (Dynamic Link Library) file, ActiveX (OCX) control components and several sample programs with source code written in Microsoft Visual C++, Visual Basic, Borland C++ Builder, Delphi, VB.NET and C#.NET. By using the SDK and sample programs, no more complex hardware-register-based operations are required at all, and users can develop their application programs easily and quickly.



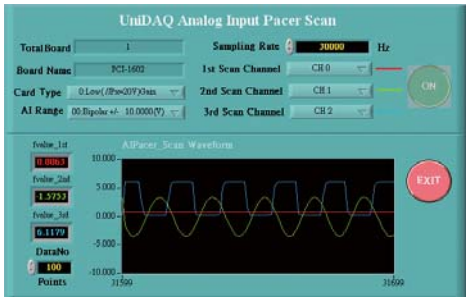
The UniDAQ is the new generation of Windows SDK that supports most I/O cards of ICP DAS, and users can then use the universal software interface to access these cards. The UniDAQ SDK supports 32-bit and 64-bit Windows, and also provides sample programs with source code for several programming languages.

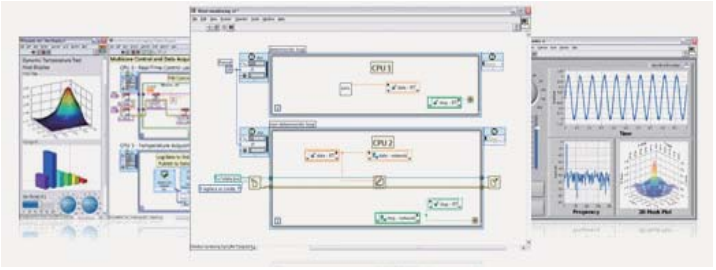






The NI LabVIEW is a graphical programming environment used to develop sophisticated measurement, test, and control systems using intuitive graphical icons and wires that resemble a flowchart. It is scalable across multiple operating systems and offers hundreds of built-in libraries. The ICP DAS UniDAQ SDK also supports a toolkit for LabVIEW platform. Users can develop their I/O card applications quickly and easily in LabVIEW with the UniDAQ LabVIEW toolkit and sample programs. The advantage of supporting most of the ICP DAS PCI I/O cards comes from the UniDAQ SDK also can help users to transfer their applications to different PCI I/O cards smoothly and quickly.





PEX-D48

PCI Express, 48-ch OPTO-22 Compatible DIO Board

Features

- PCI Express x1, Plug & Play
- 48 buffered TTL digital I/O lines
- DIO response time is about 1 µs (1 MHz max.)
- Six 8-bit bi-direction I/O ports
- Emulate two industrial-standard 8255 PPI ports (mode 0)
- D/I with pull-high and pull-low jumpers
- D/O with higher driving capability
- One 32-bit programmable internal timer
- One 16-bit event counter
- 4 Interrupt sources
- Card ID function

Introduction

The PEX-D48 is the new generation product that ICP DAS provides to meet RoHS compliance requirement, and is designed as easy replacement for the PIO-D48/PIO-D48U. Users can replace the PIO-D48/PIO-D48U by the PEX-D48 directly without any software/driver modification.

The PEX-D48 supports PCI Express bus and provides 48 TTL digital I/O lines. These lines are grouped into six 8-bit bi-direction ports. Every three 8-bit ports are named as port A (PA), port B (PB) and port C (PC) in a connector, and the port C can be split into 2 nibble-wide (4-bit) parts. All ports are configured as inputs upon power-up or reset.

The PEX-D48 adds a Card ID switch for users to recognize the board by the ID via software when using two or more PEX-D48 cards in one computer. The pull-high/low jumpers allow user to predefine the DI status instead of floating when the DI channels are unconnected or broken.

Hardware Specifications

Digital I/O			
I/O Channels	48-ch, 5 V TTL compatible	Output Source Current	32 mA max.
Input Logic Low	0.8 V max.	Output Sink Current	64 mA max.
Input Logic High	2.4 V min.	Programmable Interrupts	4
General			
Bus	PCI Express x1	Connectors	Female DB-37 x 1 50-pin Male box header x 1
Power Consumption	900 mA @ +5 V	Output Sink Current	0 ~ +60 °C
Storage Temperature	-20 ~ +70 °C	Humidity	5 ~ 85% RH, non-condensing

Software

- DOS Lib and TC/BC/MSC sample program (with source codes)
- Supports 32-bit and 64-bit Windows XP/2003/Vista/7
- VB/VC/Delphi/BCB/VB.NET/C#.NET sample programs with source codes
- Supports LabVIEW and Linux

Pin Assignments

Pin Assignment	Terminal No.		Pin Assignment
		19	GND
PA_0	37	18	Vcc
PA_1	36	17	GND
PA_2	35	16	N.C.
PA_3	34	15	GND
PA_4	33	14	N.C.
PA_5	32	13	GND
PA_6	31	12	N.C.
PA_7	30	11	GND
PC_0	29	10	PB_0
PC_1	28	09	PB_1
PC_2	27	08	PB_2
PC_3	26	07	PB_3
PC_4	25	06	PB_4
PC_5	24	05	PB_5
PC_6	23	04	PB_6
PC_7	22	03	PB_7
GND	21	02	N.C.
Vcc	20	01	N.C.

CN1

Pin Assignment	Terminal No.		Pin Assignment
GND	50	49	Vcc
GND	48	47	PA_0
GND	46	45	PA_1
GND	44	43	PA_2
GND	42	41	PA_3
GND	40	39	PA_4
GND	38	37	PA_5
GND	36	35	PA_6
GND	34	33	PA_7
GND	32	31	PB_0
GND	30	29	PB_1
GND	28	27	PB_2
GND	26	25	PB_3
GND	24	23	PB_4
GND	22	21	PB_5
GND	20	19	PB_6
GND	18	17	PB_7
GND	16	15	PC_0
GND	14	13	PC_1
GND	12	11	PC_2
GND	10	09	PC_3
GND	08	07	PC_4
GND	06	05	PC_5
GND	04	03	PC_6
GND	02	01	PC_7

CN2, CN3, CN4, CN5, CN6 and CN7

Ordering Information

PEX-D48 CR	PCI Express, 48-ch TTL DIO board (RoHS)

PEX-P16R16i

PCI Express, 16-ch Isolated Digital Input and 16-ch Relay Output Board

Features

- PCI Express x1 interface
- 16-ch relay output, 16-ch isolated digital input
- 3750 V isolated digital input
- Optional DC input filter
- Built-in AC (120 V max.) input filter
- 7 ms relay release time
- Card ID function

Introduction

The PEX-P16R16i is a PCI Express card with programmable digital I/O interface. It provides 16 photo couple digital inputs with 3750 V isolation protection, allows the input signals to be completely floated to prevent the ground loops. It is also equipped with 16 relay outputs for controlling ON/OFF of external devices, driving external relays or small power switches, and activating alarms... etc.

The PEX-P16R16i is designed as easy replacement for the PISO-P16R16/PISO-P16R16U, and users can replace the PISO-P16R16/PISO-P16R16U with the PEX-P16R16i directly without any software/driver modification.

Hardware Specifications

Digital Input					
Isolation Voltage	3750 V (Photo-couple)	Input Voltage	Logic 1: AC/DC 5 ~ 24 V (AC 50 ~ 1 kHz) Logic 0: AC/DC 0 ~ 1 V	Response Speed	Without Filter: 50 kHz (Typical) With Filter: 0.455 kHz (Typical)
Channels	16				
Relay Output					
Channels	16	Operating Time	1 ms (typical)	Life	Mechanical: 5,000,000 ops.
Relay Type	8 SPDT, 8 SPST	Release Time	7 ms (typical)		Electrical: 100,000 ops.
Contact Rating	AC:120 V@0.5 A; DC: 24 V@1 A	Insulation Resistance	1,000 Ω		
General					
Bus	PCI Express x1	Card ID	Yes (4-bit)	Connectors	Female DB-37 x 1, 40-pin box header x 1
Power Consumption	800 mA @ +5 V	Storage Temperature	0 ~ +60 °C		

Pin Assignments

Pin Assignment	Terminal No.		Pin Assignment
NO_0	01	20	NO_3
COM_0	02	21	COM_3
NC_0	03	22	NC_3
NO_1	04	23	NO_4
COM_1	05	24	COM_4
NC_1	06	25	NO_5
NO_2	07	26	COM_5
COM_2	08	27	NO_6
NC_2	09	28	COM_6
NO_7	10	29	GND
COM_7	11	30	DIB_0
DIA_0	12	31	DIB_1
DIA_1	13	32	DIB_2
DIA_2	14	33	DIB_3
DIA_3	15	34	DIB_4
DIA_4	16	35	DIB_5
DIA_5	17	36	DIB_6
DIA_6	18	37	DIB_7
DIA_7	19		

CON1

Pin Assignment	Terminal No.		Pin Assignment
NO_8	01	02	NO_11
COM_8	03	04	COM_11
NC_8	05	06	NC_11
NO_9	07	08	NO_12
COM_9	09	10	COM_12
NC_9	11	12	NO_13
NO_10	13	14	COM_13
COM_10	15	16	NO_14
NC_10	17	18	COM_14
NO_15	19	20	GND
COM_15	21	22	DIB_8
DIA_8	23	24	DIB_9
DIA_9	25	26	DIB_10
DIA_10	27	28	DIB_11
DIA_11	29	30	DIB_12
DIA_12	31	32	DIB_13
DIA_13	33	34	DIB_14
DIA_14	35	36	DIB_15
DIA_15	37	38	-
-	39	40	-

CON2

Software

- DOS Lib and TC/BC/MSC sample program (with source codes)
- Supports 32-bit and 64-bit Windows XP/2003/Vista/7
- VB/VC/Delphi/BCB/VB.NET/C#.NET sample programs with source codes
- Supports LabVIEW and Linux

Ordering Information

PEX-P16R16i CR	PCI Express, 16-ch Isolated Digital Input, 16-ch Relay Output Board. Includes one CA-4037W cable and two CA-4002 D-Sub connectors.

Available Soon

PEX-DA4 / DA8 / DA16

PCI Express, 14-bit 4-/8-/16-ch Analog Output Board

Features

- PCI Express x1 interface
- 4-, 8- or 16-ch 14-bit analog output
- Voltage output: +/- 10 V
- Current output: 0 ~ 20 mA (sink)
- Double-buffered D/A latch
- 16-ch 5 V TTL D/I, 16-ch 5 V TTL D/O
- D/I with pull-high and pull-low jumpers
- Card ID function

Introduction

The PEX-DA4 / DA8 / DA16 series analog output board supports PCI Express interface. It is equipped with 14-bit 4/8/16 analog output channels, and each of the D/A channels features double-buffered latch.
For the PEX-DA series, its voltage output range is from -10 V to +10 V, and the current output range is from 0 to 20 mA. In addition, PEX-DA series also features the following advantages:
Accurate and easy-to-use calibration: ICP DAS provides the software calibration, so that no jumpers and trim-pots are required anymore. The calibration data is saved in EEPROM for long-term use.
Individual channel configuration: Each channel can be individually configured as voltage output or current output.
Card ID: The PEX-DA series adds a Card ID switch for users to recognize the board by the ID via software when using two or more PEX-DA cards in one computer.
The PEX-DA series is designed as easy replacement for the PIO-DA series, and users can replace the PIO-DA series by PEX-DA series directly without any software/driver modification.

Hardware Specifications

Analog Outputs						
Channels	4/8/16-ch	Resolution	14-bit	Accuracy	0.01% of FSR ± 2 LSB @ 25 °C, ± 10 V	
Output Range	+/- 10 V, 0 ~ 20 mA	Output Driving	+/- 5 mA	Slew Rate	0.71 V/μs	
Digital Inputs						
Channels	16-ch, 5 V/TTL	Input Voltage	Logic 0: 0.8 V max., Logic 1: 2.0 V min.	Response Speed	1.0 MHz (Typical)	
Digital Outputs						
Channels	16-ch, 5 V/TTL	Output Voltage	Logic 0: 0.4 V max., Logic 1: 2.4 V min.	Output Capability	Sink: 2.4 mA @ 0.8 V, Source: 0.8 mA @ 2.0 V	
Response Speed	1.0 MHz (Typical)					
General						
Bus	PCI Express x1	Card ID	Yes (4-bit)	Connectors	Female DB-37 x 1, 20-pin box header x 2	

Pin Assignments

Pin Assignment	Terminal No.		Pin Assignment
	37	19	VO_15
IO_15	36	18	VO_14
IO_14	35	17	VO_13
IO_13	34	16	VO_12
IO_12	33	15	A.GND
IO_11	32	14	VO_11
IO_10	31	13	VO_10
IO_9	30	12	VO_9
IO_8	29	11	VO_8
A.GND	28	10	A.GND
IO_7	27	09	VO_7
IO_6	26	08	VO_6
IO_5	25	07	VO_5
IO_4	24	06	VO_4
A.GND	23	05	A.GND
IO_3	22	04	VO_3
IO_2	21	03	VO_2
IO_1	20	02	VO_1
IO_0		01	VO_0

CON3

Pin Assignment	Terminal No.		Pin Assignment
DO 0	01	02	DO 1
DO 2	03	04	DO 3
DO 4	05	06	DO 5
DO 6	07	08	DO 7
DO 8	09	10	DO 9
DO 10	11	12	DO 11
DO 12	13	14	DO 13
DO 14	15	16	DO 15
GND	17	18	GND
+5V	19	20	+12V

CON1

Pin Assignment	Terminal No.		Pin Assignment
DI 0	01	02	DI 1
DI 2	03	04	DI 3
DI 4	05	06	DI 5
DI 6	07	08	DI 7
DI 8	09	10	DI 9
DI 10	10	12	DI 11
DI 12	12	14	DI 13
DI 14	14	16	DI 15
GND	16	18	GND
+5V	18	20	+12V

CON2

Software

- DOS Lib and TC/BC/MSC sample program (with source codes)
- Supports 32-bit and 64-bit Windows XP/2003/Vista/7
- VB/VC/Delphi/BCB/VB.NET/C#.NET sample programs with source codes
- Supports LabVIEW and Linux

Ordering Information

PEX-DA4 CR	PCI Express, 4-ch Analog Output board (RoHS). Includes one CA-4002 D-Sub connector.
PEX-DA8 CR	PCI Express, 8-ch Analog Output board (RoHS). Includes one CA-4002 D-Sub connector.
PEX-DA16 CR	PCI Express, 16-ch Analog Output board (RoHS). Includes one CA-4002 D-Sub connector.

PCI-822LU / PCI-826LU

Universal PCI, 250 kS/s, 32/16-ch 12-bit or 16-bit A/D,
2-ch 16-bit D/A and 32-ch Programmable DIO Board

Features

- Universal PCI (3.3 V/5 V) interface
- 32-ch S.E./16-ch Diff. analog input
- 12-bit 250 kS/s high-speed A/D for PCI-822LU
- 16-bit 250 kS/s high-speed A/D for PCI-826LU
- 8K-sample hardware FIFO
- Supports software-trigger and pacer-trigger
- Programmable low gain: 1, 2, 4, 8
- Built-in MagicScan controller
- 2-ch 16-bit analog output
- 32-ch programmable DIO
- D/I with pull-high and pull-low jumpers
- DO with status read back function
- Card ID function

Introduction

The PCI-822LU/826LU is a multi-function card that providing high-speed analog and digital I/O functions. It features a continuous, 250 kS/s 12-bit or 16-bit resolution A/D converter, 8K-sample hardware FIFO, 2-ch 16-bit D/A converter, and 32-ch programmable digital I/O with DO read back. The PCI-822LU/826LU provides either 32-CH single-ended or 16-CH differential analog inputs which are jumper selectable, and is equipped with a high speed PGA featuring programmable gain (1, 2, 4 or 8).

The PCI-822LU/826LU has a Card ID switch for users to recognize the board by the ID via software when using two or more PCI-822LU/826LU cards in one computer. The pull-high/low jumpers of the card allow user to predefine the DI status instead of floating when the DI channels are unconnected or broken.

The A/D channel scan function of the PCI-822LU/826LU is so amazing, we call it MagicScan. The MagicScan controller takes out most works of getting A/D value such as selecting channel, setting gain, settling time, triggering ADC and getting data. With the built-in MagicScan and interrupt features, it is effectively off-loading your system CPU from the job. Even in channel scan mode, it can have different gain code for each channel, and the sampling rate can still reach 250 kS/s totally. The PCI-822LU/826LU is suitable for high end applications.

Hardware Specifications

Analog Input							
Channels	32 single-ended/16 differential			Resolution	12-bit (PCI-822LU) / 16-bit (PCI-826LU)		
Sampling Rate	250 kS/s. max.	FIFO Size	8192 samples	Accuracy	0.1 % of FSR ±1 LSB @ 25 °C, ± 10 V		
Analog Output							
Channels	2	Resolution	16-bit	Accuracy	± 6 LSB	Output Driving	± 5 mA
Output Range	±5 V, ±10 V, 0 ~ 10 V, 0 ~ 5 V			Slew Rate	8.33 V/μs		
Programmable Digital I/O							
Channels	32	Compatibility	5 V/TTL	Output Capability	Sink: 2.4 mA @ 0.8 V; Source: 0.8 mA @ 2.0 V		
General							
Bus	3.3 V/5 V Universal PCI, 32-bit		Card ID	Yes (4-bit)	Connectors	Female DB-37 x 1, 20-pin box header x 2	

Pin Assignments

Pin Assignment	Terminal No.		Pin Assignment
D.GND	37	19	Ext Trg
Da2 out	36	18	Da1 out
AI_31	35	17	A.GND
AI_30	34	16	AI_15
AI_29	33	15	AI_14
AI_28	32	14	AI_13
AI_27	31	13	AI_12
AI_26	30	12	AI_11
AI_25	29	11	AI_10
AI_24	28	10	AI_9
AI_23	27	09	AI_8
AI_22	26	08	AI_7
AI_21	25	07	AI_6
AI_20	24	06	AI_5
AI_19	23	05	AI_4
AI_18	22	04	AI_3
AI_17	21	03	AI_2
AI_16	20	02	AI_1
		01	AI_0

CON3

Pin Assignment	Terminal No.		Pin Assignment
PB 0	01	02	PB 1
PB 2	03	04	PB 3
PB 4	05	06	PB 5
PB 6	07	08	PB 7
PB 8	09	10	PB 9
PB 10	11	12	PB 11
PB 12	13	14	PB 13
PB 14	15	16	PB 15
GND	17	18	GND
+5V	19	20	+12V

CON1

Pin Assignment	Terminal No.		Pin Assignment
PA 0	01	02	PA 1
PA 2	03	04	PA 3
PA 4	05	06	PA 5
PA 6	07	08	PA 7
PA 8	09	10	PA 9
PA 10	10	12	PA 11
PA 12	12	14	PA 13
PA 14	14	16	PA 15
GND	16	18	GND
+5V	18	20	+12V

CON2

Software

- DOS Lib and TC/BC/MSC sample program (with source codes)
- Supports 32-bit and 64-bit Windows XP/2003/Vista/7
- VB/VC/Delphi/BCB/VB.NET/C#.NET sample programs with source codes

Ordering Information

PCI-822LU CR	Universal PCI, 250 kS/s, 32/16-ch 12-bit Analog Input, 2-ch 16-bit Analog Output and 32-ch Programmable DIO.(RoHS). Includes one CA-4002 D-Sub connector.
PCI-826LU CR	Universal PCI, 250 kS/s, 32/16-ch 16-bit Analog Input, 2-ch 16-bit Analog Output and 32-ch Programmable DIO.(RoHS). Includes one CA-4002 D-Sub connector.

PCI-D64HU

Universal PCI, 40 MB/s High-Speed 32-ch D/I and 32-ch D/O Board

Features

- Universal PCI (3.3 V/5 V) interface
- 32-ch 5 V TTL digital input
- 32-ch 5 V TTL digital output
- 2-ch bus mastering scatter/gather DMA
- Data transfer rate up to 40 MB/s for each DMA channel
- Data transfer modes:
  - Direct program control, Internal timer pacer
  - External clock (D/I only), Handshaking
- On board 1 k/2 k DWORD FIFO for DI/DO respectively
- DO FIFO supports ring buffer mode
- No bus loading in repetitive pattern generation application

Introduction

The PCI-D64HU is a high-speed digital I/O card consisting of 32 digital input channels and 32 digital output channels. High-performance designs make this card perfect for high-speed data transfer and pattern generation applications.

The PCI-D64HU performs high-speed data transfer by bus-mastering DMA via 32-bit PCI bus. The maximum data transfer rate can be up to 40 MB per second.

Several digital I/O transfer modes are supported, such as direct programmed I/O control, timer pacer control, external clock mode and handshaking mode. The PCI-D64HU also features programmable digital filter for all input signals including handshaking and trigger signals.

The PCI-D64HU is a reliable and cost-effective connection interface that works on your computer system to control high-speed peripherals.

Hardware Specifications

Digital Input					
Channels	32	Compatibility	5 V/TTL	Input Voltage	Logic 0: 0.8 V max.; Logic 1: 2.0 V min.
Handshaking Signals	I_REQ input , I_ACK output , I_TRG input				
Digital Output					
Channels	32	Compatibility	5 V/TTL	Output Voltage	Logic 0: 0.55 V max.; Logic 1: 2.0 V min.
Output Capability	Sink: 64 mA @ 0.55 V; Source: -32 mA @ 2.0 V			Handshaking Signals	O_REQ output, O_ACK input, O_TRG output
Transfer Speed	40 MB/sec for DI and DO simultaneously (max.)				
On Board FIFO					
Size	1 k DWORD (32-bit) for DI; 2 k DWORD (32-bit) for DO			Size in Ring Buffer Mode	2 ~ 2 k DWORD (32-bit), DO only
General					
Bus Type	Universal PCI, 32-bit, 33 MHz	Connectors	Female DB-37 x1, 40-pin Box header x 1	Power Consumption	200 mA @ +5 V typical (output no load)

Pin Assignments

Pin Assignment	Terminal No.		Pin Assignment
I_TRG	37	19	I_REQ
GND	36	18	I_ACK
DO_15	35	17	+5V
DO_14	34	16	DI_15
DO_13	33	15	DI_14
DO_12	32	14	DI_13
DO_11	31	13	DI_12
DO_10	30	12	DI_11
DO_9	29	11	DI_10
DO_8	28	10	DI_9
DO_7	27	09	DI_8
DO_6	26	08	DI_7
DO_5	25	07	DI_6
DO_4	24	06	DI_5
DO_3	23	05	DI_4
DO_2	22	04	DI_3
DO_1	21	03	DI_2
DO_0	20	02	DI_1
		01	DI_0

CON1

Pin Assignment	Terminal No.		Pin Assignment
N.C.	40	39	N.C.
N.C.	38	37	O_REQ
O_TRG	36	35	O_ACK
GND	34	33	+5V
DO_31	32	31	DI_31
DO_30	30	29	DI_30
DO_29	28	27	DI_29
DO_28	26	25	DI_28
DO_27	24	23	DI_27
DO_26	22	21	DI_26
DO_25	20	19	DI_25
DO_24	18	17	DI_24
DO_23	16	15	DI_23
DO_22	14	13	DI_22
DO_21	12	11	DI_21
DO_20	10	09	DI_20
DO_19	08	07	DI_19
DO_18	06	05	DI_18
DO_17	04	03	DI_17
DO_16	02	01	DI_16

CON2

Software

- Supports Windows 2000/XP/2003/Vista/7
- VB/VC/BCB sample programs with source code

Ordering Information

PCI-D64HU CR	Universal PCI, 40 MB/s High-speed 32-ch DI and 32-ch DO (RoHS). Includes one CA-4037W cable and two CA-4002 D-Sub connectors.

VXC-112AU / VXC-112iAU / VXC-142AU / VXC-142iAU

Universal PCI, 2-Port RS-232 or RS-422/485 Communication Board

Features

- Supports 3.3 V/5 V PCI bus, Plug and Play
- Built-in COM-Selector
- Provides 2 RS-232 ports for VXC-112AU/VXC-112iAU
- Provides 2 RS-422/485 ports for VXC-142AU/VXC-142iAU
- 128-byte Hardware FIFO for Each Port
- +/-4 kV ESD Protection for VXC-112iAU/VXC-142iAU
- 2500 V_{DC} Isolation for VXC-112iAU/VXC-142iAU

Introduction

The VXC-112AU/VXC-112iAU/VXC-142AU/VXC-142iAU communication card provides 2 RS-232 or RS-422/485 serial ports. Each port supports for speed up to 115200 bps and can work for full-duplex communication.

Users may specify a COM port number manually by setting COM-Selector (DIP switch), or let the driver choose an available number automatically. The driver provides a maximum of 128 KB software buffer for each COM port under Windows. It's practical for large file transmission.

In harsh industrial environments, the on board ESD protection component diverts the potentially damaging charge away from sensitive circuit and protects the computer and equipment from being damaged by high potential voltage.

The VXC-112iAU/VXC-142iAU offers photo isolation to protect your computer and equipment against damages in harsh environment. The built-in photo coupler 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.

The serial communication card are designed for use with intelligent devices like bar code reader, serial printers, intelligent sensors, instrumentation equipment, computers and almost any device with an RS-232 or RS-422/485 port.

Hardware Specifications

Serial Port					
COM1/2	9-Wire RS-232 for VXC-112AU/VXC-112iAU Selectable 8-Wire RS-422 or 2-Wire RS-485 for VXC-142AU/VXC-142iAU				
UART	16C950 compatible	Baud Rate	50 ~ 115200 bps	Data Bit	5, 6, 7, 8
Stop Bit	1, 1.5, 2	Parity	None, Even, Odd, Mark, Space	FIFO	Internal 128 bytes
ESD Protection	+/- 4 kV for VXC-112iAU/VXC-142iAU	Isolation	2500 V_{DC} for VXC-112iAU/VXC-142iAU		
General					
Bus	3.3 V/5 V, 33 MHz, 32-bit	COM-Selector	Yes (8-bit DIP switch)	Connector	Male DB-9 x 2
Power Consumption	VXC-112AU: 100 mA @ 5 V ;VXC-112iAU: 480 mA @ 5 V; VXC-142U: 100 mA @ 5 V ;VXC-142iU: 480 mA @ 5 V				

Pin Assignments

Pin Assignment	Terminal No.	No.	Pin Assignment
GND	05	09	RI
DTR	04	08	CTS
TxD	03	07	RTS
RxD	02	06	DSR
DCD	01		

RS-232 Male DB-9 Connector

Pin Assignment	Terminal No.	No.	Pin Assignment
GND/VEE	05	09	CTS-(A)
RxD-(A)	04	08	CTS+(B)
RxD+(B)	03	07	RTS+(B)
TxD+(B)/Data+(B)	02	06	RTS-(A)
TxD-(A)/Data-(A)	01		

RS-422/485 Male DB-9 Connector

Software

- Drivers for 32-bit Windows 2000/XP/2003/Vista/7
- Drivers for 64-bit Windows XP/2003/Vista/7

Ordering Information

VXC-112AU CR	Universal PCI, 2-Port RS-232 Communication Board (RoHS)
VXC-112iAU CR	Universal PCI, 2-Port Isolated RS-232 Communication Board (RoHS)
VXC-142AU CR	Universal PCI, 2-Port RS-422/485 Communication Board (RoHS)
VXC-142iAU CR	Universal PCI, 2-Port Isolated RS-422/485 Communication Board (RoHS)

Available Soon

VEX-114 / VEX-114i / VXC-114U / VXC-114iAU

PCI Express / Universal PCI, 4-Port RS-232 Communication Board

Features

- VXC versions supports 3.3 V/5 V PCI bus
- VEX versions supports PCI Express bus
- Built-in COM-Selector
- Provides 4 RS-232 ports
- 128-byte Hardware FIFO for Each Port
- +/-4 kV ESD Protection for VEX-114i/VXC-114iAU
- 2500 V_{DC} Isolation for VEX-114i/VXC-114iAU
- Short Card Design

Introduction

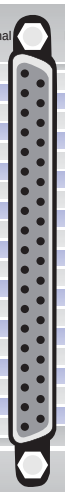
The VEX-114/VEX-114i/VXC-114U/VXC-114iAU communication card provides 4 RS-232 serial ports. Each port supports for speed up to 115200 bps and can work for full-duplex communication.
Users may specify a COM port number manually by setting COM-Selector (DIP switch), or let the driver choose an available number automatically. The driver provides a maximum of 128 KB software buffer for each COM port under Windows. It's practical for large file transmission.
In harsh industrial environments, the on board ESD protection component diverts the potentially damaging charge away from sensitive circuit and protects the computer and equipment from being damaged by high potential voltage.
The VEX-114/VXC-114iAU offers photo isolation to protect your computer and equipment against damages in harsh environment. The built-in photo coupler 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.
The serial communication card are designed for use with intelligent devices like bar code reader, serial printers, intelligent sensors, instrumentation equipment, computers and almost any device with an RS-232 port.

Hardware Specifications

Serial Port					
COM1~4	9-Wire RS-232	UART	16C950 compatible	Baud Rate	50 ~ 115200 bps
Data Bit	5, 6, 7, 8	Stop Bit	1, 1.5, 2	Parity	None, Even, Odd, Mark, Space
FIFO	Internal 128 bytes	ESD Protection	+/- 4 kV (VEX-114i/VXC-114iAU)	Isolation	2500 V_{DC} (VEX-114i/VXC-114iAU)
General					
Bus	VEX versions: PCI Express x1; VXC versions: 3.3 V/5 V, 33 MHz, 32-bit			COM-Selector	Yes (8-bit DIP switch)
Connector	Female DB-37 x 1	Power Consumption	VEX-114: 120 mA @ 5 V; VEX-114i: 880 mA @ 5 V; VXC-114U: 120 mA @ 5 V; VXC-114iAU: 880 mA @ 5 V		

Pin Assignments

Pin Assignment	Terminal No.	Pin Assignment
N.C.	01	
DCD3	02	20 RI3
GND	03	21 DTR3
CTS3	04	22 DSR3
RxD3	05	23 RTS3
RI4	06	24 TxD3
DTR4	07	25 DCD4
DSR4	08	26 GND
RTS4	09	27 CTS4
TxD4	10	28 RxD4
DCD2	11	29 RI2
GND	12	30 DTR2
CTS2	13	31 DSR2
RxD2	14	32 RTS2
RI1	15	33 TxD2
DTR1	16	34 DCD1
DSR1	17	35 GND
RTS1	18	36 CTS1
TxD1	19	37 RxD1



RS-232 Female DB-37 Connector

Software

- Drivers for 32-bit Windows 2000/XP/2003/Vista/7
- Drivers for 64-bit Windows XP/2003/Vista/7

Ordering Information

VXC-114 CR	PCI Express, 4-Port RS-232 Communication Board (RoHS)
VXC-114i CR	PCI Express, 4-Port Isolated RS-232 Communication Board (RoHS)
VXC-114U CR	Universal PCI, 4-Port RS-232 Communication Board (RoHS)
VXC-114iAU CR	Universal PCI, 4-Port Isolated RS-232 Communication Board (RoHS)

Available Soon

VEX-144 / VEX-144i / VXC-144U / VXC-144iU

PCI Express / Universal PCI, 4-Port RS-422/485 Communication Board

Features

- VXC versions supports 3.3 V/5 V PCI bus
- VEX versions supports PCI Express bus
- Built-in COM-Selector
- Provides 4 RS-422/485 ports
- 128-byte Hardware FIFO for Each Port
- +/-4 kV ESD Protection for VEX-144i/VXC-144iU
- 2500 V_{DC} Isolation for VEX-144i/VXC-144iU
- Short Card Design

Introduction

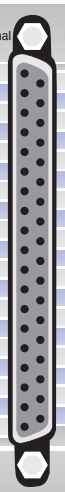
The VEX-144/VEX-144i/VXC-144U/VXC-144iU communication card provides 4 RS-422/485 serial ports. Each port supports for speed up to 115200 bps and can work for full-duplex communication.
Users may specify a COM port number manually by setting COM-Selector (DIP switch), or let the driver choose an available number automatically. The driver provides a maximum of 128 KB software buffer for each COM port under Windows. It's practical for large file transmission.
In harsh industrial environments, the on board ESD protection component diverts the potentially damaging charge away from sensitive circuit and protects the computer and equipment from being damaged by high potential voltage.
The VEX-144/VXC-144iU offers photo isolation to protect your computer and equipment against damages in harsh environment. The built-in photo coupler 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.
The serial communication card are designed for use with intelligent devices like bar code reader, serial printers, intelligent sensors, instrumentation equipment, computers and almost any device with an RS-422/485 port.

Hardware Specifications

Serial Port					
COM1~4	Selectable 8-Wire RS-422 or 2-Wire RS-485			UART	16C950 compatible
Baud Rate	50 ~ 115200 bps	Data Bit	5, 6, 7, 8	Parity	None, Even, Odd, Mark, Space
FIFO	Internal 128 bytes	ESD Protection	+/- 4 kV (VEX-144i/VXC-144iU)	Isolation	2500 V_{DC} (VEX-144i/VXC-144iU)
General					
Bus	VEX versions: PCI Express x1; VXC versions: 3.3 V/5 V, 33 MHz, 32-bit			COM-Selector	Yes (8-bit DIP switch)
Connector	Female DB-37 x 1	Power Consumption	VEX-144: 120 mA @ 5 V; VEX-144i: 880 mA @ 5 V; VXC-144U: 120 mA @ 5 V; VXC-144iU: 880 mA @ 5 V		

Pin Assignments

Pin Assignment	Terminal No.	Pin Assignment
N.C.	01	
TxD3-(A)/Data3-(A)	02	20 CTS3-(A)
GND/VEE3	03	21 RxD3-(A)
CTS3+(B)	04	22 RTS3-(A)
TxD3+(B)/Data3+(B)	05	23 RTS3+(B)
CTS4-(A)	06	24 RxD3+(B)
RxD4-(A)	07	25 TxD4-(A)/Data4-(A)
RTS4-(A)	08	26 GND/VEE4
RTS4+(B)	09	27 CTS4+(B)
RxD4+(B)	10	28 TxD4+(B)/Data+(B)
TxD2-(A)/Data2-(A)	11	29 CTS2-(A)
GND/VEE2	12	30 RxD2-(A)
CTS2+(B)	13	31 RTS2-(A)
TxD2+(B)/Data2+(B)	14	32 RTS2+(B)
CTS1-(A)	15	33 RxD2+(B)
RxD1-(A)	16	34 TxD1-(A)/Data1-(A)
RTS1-(A)	17	35 GND/VEE1
RTS1+(B)	18	36 CTS1+(B)
RxD1+(B)	19	37 TxD1+(B)/Data1+(B)



RS-422/485 Female DB-37 Connector

Software

- Drivers for 32-bit Windows 2000/XP/2003/Vista/7
- Drivers for 64-bit Windows XP/2003/Vista/7

Ordering Information

VEX-144 CR	PCI Express, 4-Port RS-422/485 Communication Board (RoHS)
VEX-144i CR	PCI Express, 4-Port Isolated RS-422/485 Communication Board (RoHS)
VXC-144U CR	Universal PCI, 4-Port RS-422/485 Communication Board (RoHS)
VXC-144iU CR	Universal PCI, 4-Port Isolated RS-422/485 Communication Board (RoHS)

Universal PCI I/O Cards

PISO-DA16U / DA8U / DA4U

Universal PCI, 14-bit 16/8/4-ch Bus-type Isolated Analog Output Board

- Universal PCI (3.3 V/5 V) interface
- 2500 V_{DC} bus-type isolation protection
- 3000 V_{DC} power isolation protection
- 16-/8-/4-ch, 14-bit analog output
- Voltage output: ±10 V
- Current output: 0 ~ 20 mA (sink)
- Double-buffered D/A latch
- 16-ch 5 V TTL D/I and 16-ch 5 V TTL D/O
- D/I with pull-high and pull-low jumpers
- Two pacer timer interrupt sources
- Card ID function
- Drop-in replacement for the PIO-DA16/DA8/DA4

ISO-P32S32W / PISO-P32S32WU

ISA or Universal PCI, 32-ch Optical-Isolated D/I and 32-ch Optical-Isolated Open Collector Output Board

- Universal PCI (3.3 V/5 V) for PISO-P32S32WU
- ISA bus for ISO-P32S32W
- 32-ch optical-isolated digital input
- Input voltage up to 30 V_{DC}
- 32-ch optical-isolated open collector output
  - 500 mA (8-ch) high-driving
  - 100 mA (24-ch) driving
  - Current Sinking (NPN)
- Isolation Voltage: 3750 V

PCI-M512U

Universal PCI, 512 KB Memory Board with DI / DO

- Universal PCI (3.3 V/5 V) interface
- On-board 512 KB SRAM
- Two Li-batteries for battery-backup the data of SRAM
- LED indicators for low- and bad-battery status
- 16-ch 5 V TTL D/O
- 12-ch 5 V TTL D/I
- Supports 32-bit Windows XP/ 2003/Vista/7
- Supports VB/VC/Delphi/BCB/ VB.NET and C#
- Drop-in replacement for the PCI-M512

PCI-1202LU / 1202HU

Universal PCI, 32-ch, 12-bit, 110 or 40 kS/s Multi-function Board

- Universal PCI (3.3 V/5 V) interface
- 12-bit, 110 or 40 kS/s A/D converter
- 32 S.E./16 Diff. analog inputs
- Built-in MagicScan controller
- 1K-sample hardware FIFO
- External: Post-trigger, Pre-trigger and Middle-trigger
- Internal: Software-trigger and Pacer-trigger
- 16-ch 5 V TTL D/I and 16-ch 5 V TTL D/O
- Data transfer rate is up to 2.1 M words/s (max.)
- D/I with pull-high and pull-low function
- Two 12-bit independent programmable DAC, 2 MHz throughput per channel (max.)
- Drop-in replacement for the PCI-1202L/1202H

PCI-1602U / 1602FU

Universal PCI, 32-ch, 16-bit, 100 or 200 kS/s Multi-function Board

- Universal PCI (3.3 V/5 V) interface
- 16-bit, 100 or 200 kS/s A/D converter
- 32 S.E./16 Diff. analog inputs
- Built-in MagicScan controller
- 8K-sample hardware FIFO
- External: Post-trigger, Pre-trigger and Middle-trigger
- Internal: Software-trigger and Pacer-trigger
- 16-ch 5 V TTL D/I and 16-ch 5 V TTL D/O
- Data transfer rate is up to 2.1 M words/s (max.)
- D/I with pull-high and pull-low jumpers
- Two 12-bit independent programmable DAC, 2 MHz throughput per channel (max.)
- Drop-in replacement for the PCI-1602/1602F

PCI-1002LU / 1002HU

Universal PCI, 32-ch, 12-bit, 110 or 44 kS/s Multi-function Board

- Universal PCI (3.3 V/5 V) interface
- 12-bit, 32 S.E./16 Diff. analog inputs
- 110 or 44 kS/s A/D sampling rate
- Internal and external trigger
- 16-ch 5 V TTL D/I
- 16-ch 5 V TTL D/O
- D/I with pull-high and pull-low function
- Drop-in replacement for the PCI-1002L/ 1002H
- Supports 32-bit and 64-bit Windows XP/2003/Vista/7
- Supports VB/VC/Delphi/BCB/VB.NET/C#.NET sample programs with source code

PIO-DA16U / DA8U / DA4U

Universal PCI, 14-bit 16/8/4-ch Analog Output Board

- Universal PCI (3.3 V/5 V) interface
- 16-/8-/4-ch, 14-bit analog output
- Voltage output: ±10 V
- Current output: 0 ~ 20 mA (sink)
- Two pacer timer interrupt sources
- Double-buffered D/A latch
- 16-ch D/I
- 16-ch D/O
- D/I with pull-high and pull-low function
- Card ID function
- Drop-in replacement for the PIO-DA16/DA8/DA4

PISO-DA2U

Universal PCI, 2-ch Isolated Analog Output Board

- Universal PCI (3.3 V/5 V) interface
- Two independent 12-bit analog outputs
- 3000 V_{DC} isolation protection (Bus-Type and CH-CH)
- Unipolar or bipolar analog output
- Two pacer timer interrupt sources
- Double buffered D/A batch
- Software calibration
- The calibration data is fully stored in EEPROM
- Drop-in replacement for the PISO-DA2

PIO-D144U / D96U / D64U / D56U / D48U / D24U

Universal PCI, 144-/96-/64-/56-/48-24-ch 5 V TTL DIO Board

- Universal PCI (3.3 V/5 V) interface
- 144-/96-/64-/56-/48-/24-ch 5 V TTL DIO
- Emulate Industrial standard 8255 PPI port (mode 0) (PIO-D144U/D96U/D56U/D48U/D24U)
- High output driving capability (PIO-D144U/D96U/D56U/D48U/D24U)
- Interrupt handing capability
- Card ID function
- DIO response time is about 0.77 μs (1.3 MHz max.)
- Drop-in replacement for the PIO-D144/D96/D64/D56/D48/D24

PISO-P32C32U

Universal PCI, 32-ch Optically Isolated D/I and 32-ch Optically Isolated Open Collector output Board

- Universal PCI (3.3 V/5 V) interface
- 32-ch optically isolated digital input
- 32-ch optically isolated open collector output (Current Sinking, NPN type)
- 3000 V_{DC} isolation voltage
- Card ID function
- Supports 32-bit and 64-bit Windows XP/2003/Vista/7
- Supports VB/VC/Delphi/BCB/VB.NET and C#
- Drop-in replacement for the PISO-P32C32