



PEX-D64

PCI Express, 64-ch Digital I/O Board with Timer/Counter

Features

- PCI Express x1 Interface
- 32-channel Digital Input
- 32-channel Digital Output
- Interrupt Trigger via Event/Timer Trigger
- 3 Independent Programmable 16-bit Down Counters
- Supports Card ID (SMD Switch)
- Programmable Interrupt Handling



Introduction

The PEX-D64 board utilizes the PCI Express bus and is designed as an easy replacement for the PIO-D64/PIO-D64U series without requiring any modification to either the software or the driver. The PEX-D64 provides 32 Digital Input channels and 32 Digital Output channels that consist of two 16-bit input ports and two 16-bit output ports. The PEX-D64 also includes a 6-channel counter/timer that can use four clock sources, 250 kHz, 500 kHz, 1 MHz, and 2 MHz, which can be sourced from the soldering pad. Three of the six channels can be used for general purposes, such as frequency measurement, event counting or pulse generation, while the remaining channels are for interrupt functions. The PEX-D64 card also includes an onboard Card ID switch that enables the board to be recognized via software if two or more boards are installed in the same computer.

Hardware Specifications

Digital Input	
Channels	32
Compatibility	5 V/TTL
Input Voltage	Logic 0: 0.8 V Max.; Logic 1: 2.0 V Min.
Response Speed	500 kHz (Typical)
Digital Output	
Channels	32
Compatibility	5 V/TTL
Output Voltage	Logic 0: 0.4 V Max.; Logic 1: 2.4 V Min.
Output Capability	Sink: 24 mA @ 0.8 V; Source: 15 mA @ 2.0 V
Response Speed	500 kHz (Typical)
Timer/Counter	
Channels	6 (Independent x 3/EVTIRQ x 1/ TMRIRQ x 1/EXTIRQ x 1)
Resolution	16-bit
Input Frequency	10 MHz Max.
Reference Clock	Internal: 4 MHz
General	
Bus Type	PCI Express x1
Card ID	Yes (4-bit)
Connectors	20-pin Box Header x 5
Power Consumption	200 mA @ +3.3 V 180 mA @ +12 V
Operating Temperature	0°C to +60°C
Humidity	5 to 85% RH, Non-condensing

Software

Drivers

- 32/64-bit Windows 10/11
- Linux
- DASYLab

Sample Programs

- DOS Lib and TC Demo
- VB/VC/Delphi/VB.NET/C#.NET/VC.NET/LabVIEW/Python/MATLAB

Pin Assignments

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

CN1

Pin Assignment	Terminal No.	Pin Assignment
DI 0	01	DI 1
DI 2	03	DI 3
DI 4	05	DI 5
DI 6	07	DI 7
DI 8	09	DI 9
DI 10	11	DI 11
DI 12	13	DI 13
DI 14	15	DI 15
GND	17	GND
+5 V	19	STROBE1

CN2

Pin Assignment	Terminal No.	Pin Assignment
DO 16	01	DO 17
DO 18	03	DO 19
DO 20	05	DO 21
DO 22	07	DO 23
DO 24	09	DO 25
DO 26	10	DO 27
DO 28	12	DO 29
DO 30	14	DO 31
GND	16	GND
+5 V	18	+12 V

CN3

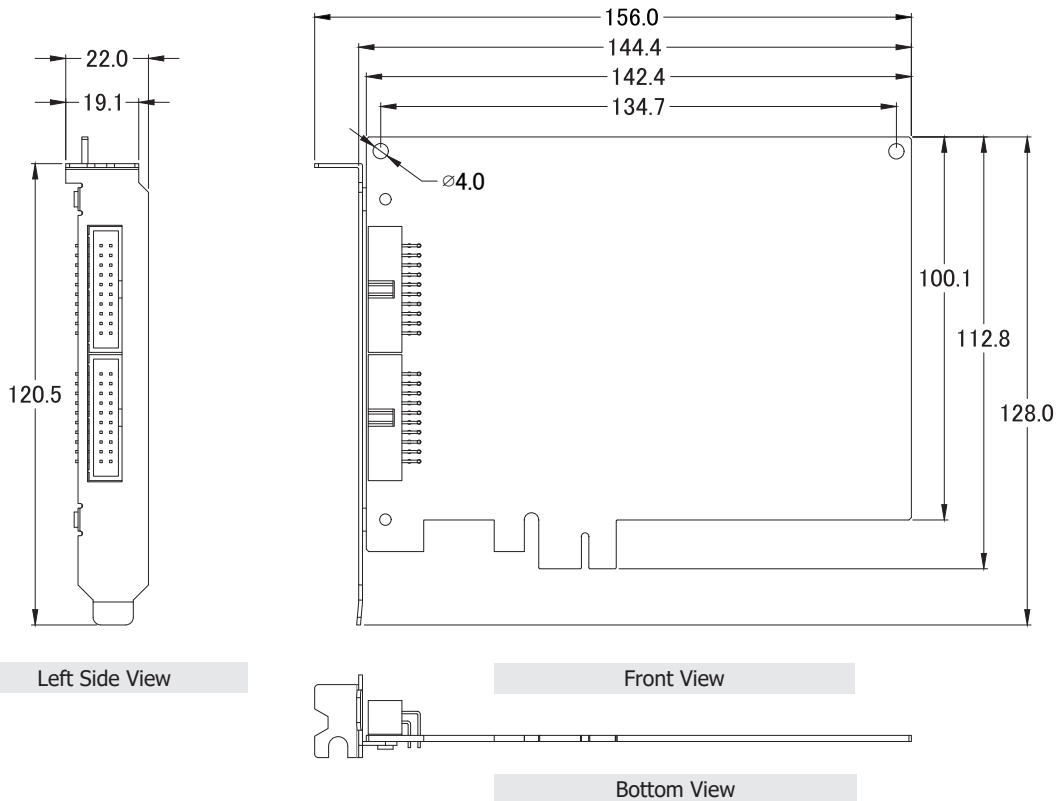
Pin Assignment	Terminal No.	Pin Assignment
DI 16	01	DI 17
DI 18	03	DI 19
DI 20	05	DI 21
DI 22	07	DI 23
DI 24	09	DI 25
DI 26	11	DI 27
DI 28	13	DI 29
DI 30	15	DI 31
GND	17	GND
+5 V	19	STROBE2

CN4

Pin Assignment	Terminal No.	Pin Assignment
CLK 2	01	CLK 1
OUT 2	03	OUT 1
GATE 2	05	GATE 1
CLK 3	07	CLK 0
OUT 3	09	OUT 0
GATE 3	10	GATE 0
GATE 4	12	CLK 4
-	14	OUT 4
GND	16	GND
+5 V	18	-

CN5

Dimensions (Units: mm)

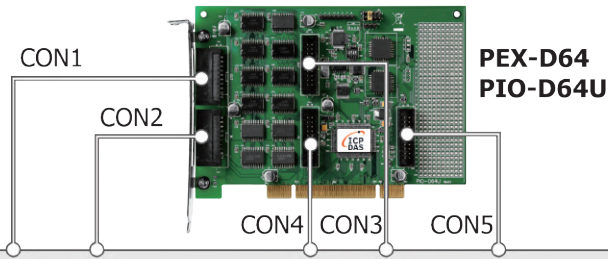


Ordering Information

PEX-D64 CR	PCI Express, 64-ch DIO Board with Timer/Counter (RoHS)
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Accessories

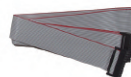
	CA-2002 CR	20-pin flat cable, 20 cm x 2 (RoHS)
	CA-2010 CR	20-pin flat cable, 1 M (RoHS)
	CA-2020 CR	20-pin flat cable, 2 M (RoHS)
	DB-24PR CR	24-channel power relay board (RoHS)
	DB-24POR CR	24-channel of PhotoMos Relay output board (RoHS)
	DN-20 CR	Two 20-pin header DIN-rail terminal board (RoHS)
	DN-20/N CR	DN-20 without DIN-Rail mount (RoHS)
	DB-16P CR	Isolated Digital Input Daughter Board (RoHS)
	DB-16R CR	Relay Output Daughter Board (RoHS)
	ADP-20/PCI CR	20-pin extender (RoHS)



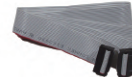
Cable (20PIN)



CA-2002 (20CM)



CA-2010 (1M)



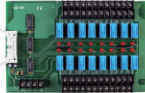
CA-2020 (2M)

20PIN

Daughter Boards



DB-16P



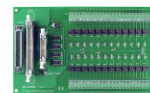
DB-16R



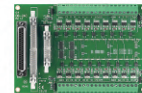
DN-20



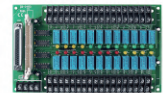
DB-24PR



DB-24POR



DB-24C



DB-24RD