



PEX-D64

PCI Express, 64-channel Digital I/O Board

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 XP/2003/2008/7/8/10
- Linux
- DASyLab

Sample Programs

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

Pin Assignments

Pin Assignment	Terminal No.	Pin Assignment	Pin Assignment	Terminal No.	Pin Assignment
DO 0	01	02	DO 1	02	DO 1
DO 2	03	04	DO 3	04	DO 3
DO 4	05	06	DO 5	06	DO 5
DO 6	07	08	DO 7	08	DO 7
DO 8	09	10	DO 9	10	DO 9
DO 10	10	12	DO 11	12	DO 11
DO 12	12	14	DO 13	14	DO 13
DO 14	14	16	DO 15	16	DO 15
GND	16	18	GND	18	GND
+5 V	18	20	+12 V	20	STROBE1

CON1

Pin Assignment	Terminal No.	Pin Assignment	Pin Assignment	Terminal No.	Pin Assignment
DO 0	01	02	DO 1	02	DO 1
DO 2	03	04	DO 3	04	DO 3
DO 4	05	06	DO 5	06	DO 5
DO 6	07	08	DO 7	08	DO 7
DO 8	09	10	DO 9	10	DO 9
DO 10	11	12	DO 11	12	DO 11
DO 12	13	14	DO 13	14	DO 13
DO 14	15	16	DO 15	16	DO 15
GND	17	18	GND	18	GND
+5 V	19	20	STROBE1	20	STROBE1

CON2

Pin Assignment	Terminal No.	Pin Assignment	Pin Assignment	Terminal No.	Pin Assignment
DO 16	01	02	DO 17	02	DO 17
DO 18	03	04	DO 19	04	DO 19
DO 20	05	06	DO 21	06	DO 21
DO 22	07	08	DO 23	08	DO 23
DO 24	09	10	DO 25	10	DO 25
DO 26	10	12	DO 27	12	DO 27
DO 28	12	14	DO 29	14	DO 29
DO 30	14	16	DO 31	16	DO 31
GND	16	18	GND	18	GND
+5 V	18	20	+12 V	20	+12 V

CON3

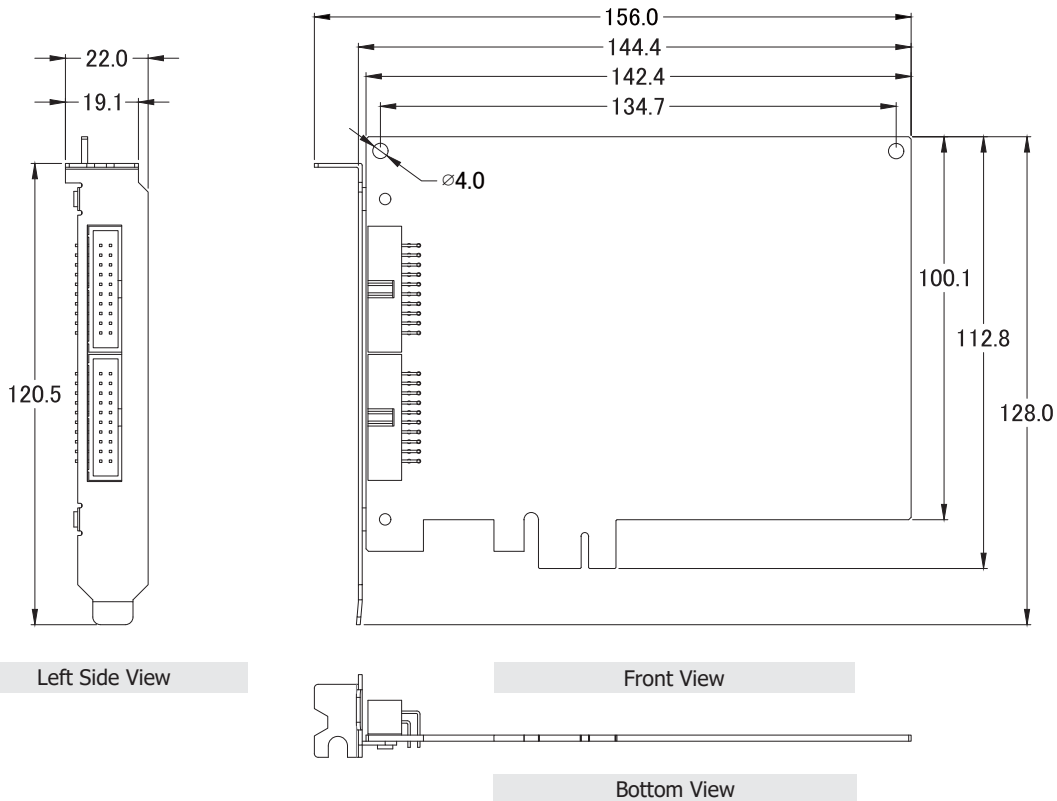
Pin Assignment	Terminal No.	Pin Assignment	Pin Assignment	Terminal No.	Pin Assignment
DO 16	01	02	DO 17	02	DO 17
DO 18	03	04	DO 19	04	DO 19
DO 20	05	06	DO 21	06	DO 21
DO 22	07	08	DO 23	08	DO 23
DO 24	09	10	DO 25	10	DO 25
DO 26	11	12	DO 27	12	DO 27
DO 28	13	14	DO 29	14	DO 29
DO 30	15	16	DO 31	16	DO 31
GND	17	18	GND	18	GND
+5 V	19	20	STROBE2	20	STROBE2

CON4

Pin Assignment	Terminal No.	Pin Assignment	Pin Assignment	Terminal No.	Pin Assignment
CLK 2	01	02	CLK 1	02	CLK 1
OUT 2	03	04	OUT 1	04	OUT 1
GATE 2	05	06	GATE 1	06	GATE 1
CLK 3	07	08	CLK 0	08	CLK 0
OUT 3	09	10	OUT 0	10	OUT 0
GATE 3	10	12	GATE 0	12	GATE 0
GATE 4	12	14	CLK 4	14	CLK 4
-	14	16	OUT 4	16	OUT 4
GND	16	18	GND	18	GND
+5 V	18	20	-	20	-

CON5

Dimensions (Units: mm)



Ordering Information

PEX-D64 CR	PCI Express, 64-channel Digital I/O Board with Timer/Counter (RoHS).
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