



## PEX-D96S

PCI Express, 96-ch Digital I/O Board

## PEX-D144LS

PCI Express, 144-ch Digital I/O Board

### Introduction

The PEX-D96S/D144LS utilizes the PCI Express bus and designed as an easy replacement for the PIO-D96U/D96SU/D144U/D144LU without requiring any modification to the software or the driver.

The PEX-D96S/D144LS provides a high-density connector that reduces the amount of installation space required for the card in the computer.

The PEX-D96S/D144LS supports the 96/144 CMOS digital I/O lines that consist of twelve/eighteen 8-bit bi-direction ports: port A (PA), port B (PB) and port C (PC) in a connector. All ports are configured as input ports during power-on or after a reset.

The PEX-D96S/D144LS also includes an onboard Card ID that enables the board to be recognized via software if two or more cards are installed in the same computer.

### Hardware Specifications

Model	PEX-D96S	PEX-D144LS
<b>Hardware</b>		
Card ID	Yes (4-bit)	
Connector	Female SCSI II 100-pin x 1	Female SCSI II 100-pin x 1 50-pin box header x 1
<b>Digital Input</b>		
Channels	96 (Bi-Direction)	144 (Bi-Direction)
Type	5 V/CMOS	
TTL Input, ON Voltage Level	2.0 V Min.	
TTL Input, OFF Voltage Level	0.8 V Max.	
Response Speed	500 kHz (Typical)	250 kHz (Typical)
Trigger Mode	Static Update	
<b>Digital Output</b>		
Channels	96 (Bi-Direction)	144 (Bi-Direction)
Type	5 V/CMOS	
Operation Mode	Static Update	
Voltage	Logic 0: 0.1 V Max. Logic 1: 4.4 V Min.	
Max. Load Current	Sink: 6 mA @ 0.33 V Source: 6 mA @ 4.77 V	
Response Speed	500 kHz (Typical)	250 kHz (Typical)
<b>PC Bus</b>		
Type	PCI Express x 1	
Data Bus	8-bit	
<b>Power</b>		
Consumption	650 mA @ +3.3 V 0 mA @ +12 V	750 mA @ +3.3 V 0 mA @ +12 V
<b>Mechanical</b>		
Dimensions (mm)	95 x 130 x 22 (W x L x D)	100 x 162 x 22 (W x L x D)
<b>Environmental</b>		
Operating Temperature	0 ~ +60°C	
Storage Temperature	-20 ~ +70°C	
Humidity	5 ~ 85% RH, Non-condensing	

### Ordering Information

<b>PEX-D96S CR</b>	PCI Express, 96-ch Digital I/O Board (SCSI II Connector, RoHS)
<b>PEX-D144LS CR</b>	PCI Express, 144-ch Digital I/O Board (SCSI II Connector, RoHS)

### Features

- PCI Express x1 Interface
- Supports Card ID (SMD Switch)
- DI/O Response Time approximately 2 μs (500 kHz Max.)
- DO Provides Higher Driving Capability
- 96/144 Buffered CMOS Digital Input/Output Lines
- Twelve/Eighteen 8-bit Bi-directional I/O Ports
- Four Interrupt Sources
- Pull-high/Pull-low Jumpers for DI Channels



### Software

#### Drivers

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








#### Sample Programs

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

### Pin Assignments

Pin Assignment	Terminal No.	Pin Assignment	Pin Assignment	Terminal No.	Pin Assignment
PA_00	1	51 PA_10	GND	01	02 +5 V
PA_01	2	52 PA_11	PA_40	03	04 PA_50
PA_02	3	53 PA_12	PA_41	05	06 PA_51
PA_03	4	54 PA_13	PA_42	07	08 PA_52
PA_04	5	55 PA_14	PA_43	09	10 PA_53
PA_05	6	56 PA_15	PA_44	11	12 PA_54
PA_06	7	57 PA_16	PA_45	13	14 PA_55
PA_07	8	58 PA_17	PA_46	15	16 PA_56
PB_00	9	59 PB_10	PA_47	17	18 PA_57
PB_01	10	60 PB_11	PB_40	19	20 PB_50
PB_02	11	61 PB_12	PB_41	21	22 PB_51
PB_03	12	62 PB_13	PB_42	23	24 PB_52
PB_04	13	63 PB_14	PB_43	25	26 PB_53
PB_05	14	64 PB_15	PB_44	27	28 PB_54
PB_06	15	65 PB_16	PB_45	29	30 PB_55
PB_07	16	66 PB_17	PB_46	31	32 PB_56
PC_00	17	67 PC_10	PB_47	33	34 PB_57
PC_01	18	68 PC_11	PC_40	35	36 PC_50
PC_02	19	69 PC_12	PC_41	37	38 PC_51
PC_03	20	70 PC_13	PC_42	39	40 PC_52
PC_04	21	71 PC_14	PC_43	41	42 PC_53
PC_05	22	72 PC_15	PC_44	43	44 PC_54
PC_06	23	73 PC_16	PC_45	45	46 PC_55
PC_07	24	74 PC_17	PC_46	47	48 PC_56
GND	25	75 GND	PC_47	49	50 PC_57
PA_20	26	76 PA_30	CON2 (PEX-D144LS only)		
PA_21	27	77 PA_31			
PA_22	28	78 PA_32			
PA_23	29	79 PA_33			
PA_24	30	80 PA_34			
PA_25	31	81 PA_35			
PA_26	32	82 PA_36			
PA_27	33	83 PA_37			
PB_20	34	84 PB_30			
PB_21	35	85 PB_31			
PB_22	36	86 PB_32			
PB_23	37	87 PB_33			
PB_24	38	88 PB_34			
PB_25	39	89 PB_35			
PB_26	40	90 PB_36			
PB_27	41	91 PB_37			
PC_20	42	92 PC_30			
PC_21	43	93 PC_31			
PC_22	44	94 PC_32			
PC_23	45	95 PC_33			
PC_24	46	96 PC_34			
PC_25	47	97 PC_35			
PC_26	48	98 PC_36			
PC_27	49	99 PC_37			
+5 V	50	100 +5 V	CON1		

## Accessories

 DN-100 CR	I/O Connector Block with DIN-Rail Mounting and 100-Pin SCSI II Connector (RoHS)
 DN-100-CA CR	I/O Connector Block with DIN-Rail Mounting and 100-Pin SCSI II Connector Include one CA-SCSI100-15 cable (RoHS)
 DN-50 CR DN-50-381 CR	I/O Connector Block with DIN-Rail Mounting and 50-Pin Header (RoHS)
 CA-5002 CR	50-pin flat cable 20 cm (RoHS)
 CA-5015 CR	50-pin flat cable 1.5 M (RoHS)
 CA-SCSI100-15 CR	SCSI II 100-pin & 100-pin Male connector cable 1.5 M (RoHS)
 CA-SCSI100-30 CR	SCSI II 100-pin & 100-pin Male connector cable 3 M (RoHS)

