



PCI-D64HU

Universal PCI, 40 MB/s, 64-ch Digital I/O Board

Introduction

The PCI-D64HU is a high-speed digital I/O card containing 32 Digital Input channels and 32 Digital Output channels. The high-performance design makes this card perfect for high-speed data transfer and pattern generation applications.

The PCI-D64HU performs high-speed data transfer using a bus-mastering DMA via the 32-bit PCI bus, with a maximum data transfer rate of up to 40 MB per second. A variety of digital I/O transfer modes are supported, including direct programmed I/O control, timer pacer control, external clock mode and handshaking mode.

The PCI-D64HU also features a programmable digital filter for all input signals, including handshaking and trigger signals. The PCI-D64HU is a reliable and cost-effective interface that can be used to control any high-speed peripherals connected to your computer system.

Pin Assignments

Pin Assignment	Terminal No.	Pin Assignment	Pin Assignment	Terminal No.	Pin Assignment
DI_0	01	20 DO_0	DI_16	01	02 DO_16
DI_1	02	21 DO_1	DI_17	03	04 DO_17
DI_2	03	22 DO_2	DI_18	05	06 DO_18
DI_3	04	23 DO_3	DI_19	07	08 DO_19
DI_4	05	24 DO_4	DI_20	09	10 DO_20
DI_5	06	25 DO_5	DI_21	11	12 DO_21
DI_6	07	26 DO_6	DI_22	13	14 DO_22
DI_7	08	27 DO_7	DI_23	15	16 DO_23
DI_8	09	28 DO_8	DI_24	17	18 DO_24
DI_9	10	29 DO_9	DI_25	19	20 DO_25
DI_10	11	30 DO_10	DI_26	21	22 DO_26
DI_11	12	31 DO_11	DI_27	23	24 DO_27
DI_12	13	32 DO_12	DI_28	25	26 DO_28
DI_13	14	33 DO_13	DI_29	27	28 DO_29
DI_14	15	34 DO_14	DI_30	29	30 DO_30
DI_15	16	35 DO_15	DI_31	31	32 DO_31
+5 V	17	36 GND	+5 V	33	34 GND
I_ACK	18	37 I_TRG	O_ACK	35	36 O_TRG
I_REQ	19		O_REQ	37	38 N.C.
			N.C.	39	40 N.C.

Ordering Information

PCI-D64HU CR	Universal PCI, 40 MB/s, 64-ch Digital I/O Board (RoHS) One CA-4037W cable and two CA-4002 D-Sub connectors includes
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Features

- Universal PCI (3.3 V/5 V) Interface
- 32-channel, 5 V/TTL Digital Output
- Data Transfer Rate up to 40 MB/s for each DMA Channel
- Onboard 1 k/2 k DWORD FIFO for DI/DO, respectively
- DO FIFO Supports Ring Buffer Mode
- No Bus Loading in Repetitive Pattern Generation Applications
- 32-channel, 5 V/TTL Digital Input
- 2-channel Bus Mastering Scatter/Gather
- 8-channel Optically-isolated Digital Input
- Data Transfer Modes:
 - Direct Program Control, Internal Timer Pacer
 - External Clock (DI only), Handshaking



Software

Drivers

- 32/64-bit Windows 10/11

Sample Programs

- VB/VC/BCB Demo

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/s (Max.) for DI and DO simultaneously
Timer/Counter	
Channels	3
Resolution	16-bit
Input Frequency	2.5 ~ 20 MHz
Timer 0	DI Clock Source
Timer 1	DO Clock Source
Timer 2	Base Clock for Timer 0 and Timer 1
Interrupts	
Sources	O_ACK, I_REQ, Timer 0, Timer 1 and Timer 2
Onboard 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	3.3 V/5 V Universal PCI, 32-bit, 33 MHz
Connectors	Female DB37 x 1, 40-pin Box Header x 1
Power Consumption	200 mA @ +5 V Typical (no output load)
Operating Temperature	0°C to +60°C
Humidity	5 to 85% RH, Non-condensing

Accessories

	CA-3710 CR	DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (45°)) (RoHS)
	CA-3710D CR	DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (180°)) (RoHS)
	CA-3715DM-H CR	DB-37 Male-Male Cable, 1.5 M, 180° (RoHS)
	CA-3730DM-H CR	DB-37 Male-Male Cable, 3.0 M, 180° (RoHS)
	CA-3750DM CR	DB-37 Male-Male Cable, 5.0 M, 180° (RoHS)
	CA-3750DM-H CR	DB-37 Male-Male Cable, 5.0 M, 180° (RoHS)
	CA-4002 CR	37-pin Male D-sub connector with plastic cover (RoHS)
	CA-4037W CR	40-pin flat & D-sub 37-pin Female cable 24 cm (RoHS)
	DB-37 CR	Directly connect signal to D-sub 37-pin connector (RoHS)
	DN-37 CR	DIN Rail Mounting 37-pin Connector (RoHS)
	DN-37-381 CR	DIN-Rail Mounting 37-pin Connector (Pitch=3.81 mm) (RoHS)

