



PIO-D64U

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

Introduction

The PIO-D64U card is designed as a direct replacement for the PIO-D64 without requiring any modification to the software or the driver.

The PIO-D64U Universal PCI card supports the 3.3 V/5 V PCI bus, and 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 PIO-D64U 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 PIO-D64U 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	1 MHz
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	1 MHz
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	3.3 V/5 V Universal PCI, 32-bit, 33 MHz
Card ID	Yes (4-bit)
Connectors	20-pin Box Header x 5
Power Consumption	580 mA @ +5 V
Operating Temperature	0°C to +60°C
Humidity	5 to 85% RH, Non-condensing

Features

- Universal PCI (3.3 V/5 V) 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
- DI/O Response Time approximately 1 μ s (1 MHz)



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	Pin Assignment	Terminal No.	Pin Assignment			
DO 0	01	○ ○	DO 1	DI 0	01	○ ○	DO 2	DI 1
DO 2	03	○ ○	DO 3	DI 2	03	○ ○	DO 4	DI 3
DO 4	05	○ ○	DO 5	DI 4	05	○ ○	DO 6	DI 5
DO 6	07	○ ○	DO 7	DI 6	07	○ ○	DO 8	DI 7
DO 8	09	○ ○	DO 9	DI 8	09	○ ○	DO 10	DI 9
DO 10	10	○ ○	DO11	DI 10	11	○ ○	DO 12	DI 11
DO 12	12	○ ○	DO 13	DI 12	13	○ ○	DO 14	DI 13
DO 14	14	○ ○	DO 15	DI 14	15	○ ○	DO 16	DI 15
GND	16	○ ○	GND	GND	17	○ ○	18	GND
+5 V	18	○ ○	+12 V	+5 V	19	○ ○	20	STROBE1

CN1 CN2

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

CN3 CN4











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

CN5

Ordering Information

PIO-D64U CR	Universal PCI, 64-ch Digital I/O 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)

