ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *UEI PDXI-DIO-64ST* at our website: ***Click HERE***

PowerDAQ cPCI/PXI Digital I/O Boards



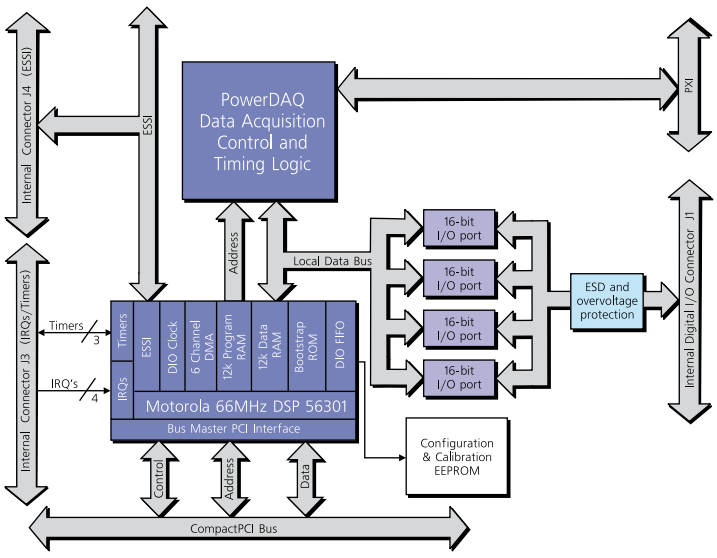
Features

- 64 lines (5V/TTL) of I/O in 16-bit ports
- Generate interrupts on any line
- Four separate high-speed IRQ lines (100 ns)
- Two Enhanced Synchronous Serial Interface (ESSI) ports for high-speed devices such as codecs
- Custom logic chip replaces obsolete 8255s and equivalents
- User-defined power-up state in 16-bit groups (High, Low, Tri-stated)
- Onboard FIFO: 1k samples in/2k samples out
- Ideal for solid-state relays
- Optional 192k-byte on-board SDRAM
- Three 24-bit counter/timers
- Port scan list
- Start/stop external trigger line
- PXI clocking/triggering support
- Rigid 96-conductor pinless SCSI connector

General Description

For applications that involve a high number of digital I/O lines, UEI offers three models in the PDXI-DIO family with 64 lines. Instead of following the industry trend of implementing discrete I/O with cumbersome and limiting 8255-type devices, we work with 16-bit line drivers under control of a DSP and custom logic.

Besides digital I/O, the board features three 24-bit counter/timers as well as two high-speed ESSI (Enhanced Synchronous Serial Interface) ports.



PowerDAQ PDXI-DIO Block Diagram

Distribution panels make all the board's I/O capabilities available for field connection. Further, an optional accessory (PDXI-DIO-CONN64-4) distributes 64 of the digital I/O points into four sets of 16 lines through industry-standard 50-pin IDC connectors. They, in turn, attach directly to relay panels available from UEI and many other sources.

FREE Software Included:

- PowerDAQ Software Suite
- PowerDAQ for Linux/RTLinux
- ProfessorDAQ Lite Excel Add-In
- PDXI Configurator
- Drivers for:
  Windows/Linux, QNX (optional), LabVIEW, VEE/VEE OneLab, TestPoint, DasyLab, DIAdem, MATLAB/xPC Target, LabVIEW Real-Time

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Technical Specifications

DC Electrical Characteristics Over Operating Range

Parameter	Test conditions	Result
Input High Level	Guaranteed logic High level	2.0V min
Input Low Level	Guaranteed logic Low level	0.8V max
Input High Current	V_I = 5V	±1 µA max
Input Low Current	V_I = Gnd	±1 µA max
3-State Output Current	V_O = 2.7V	±1 µA max
3-State Output Current	V_O = 0.5V	±1 µA max
Short-Circuit Current	V_O = Gnd (momentary)	-80 mA min -140 mA typ -250 mA max
Input Hysteresis		100 mV typ

Counter/Timer

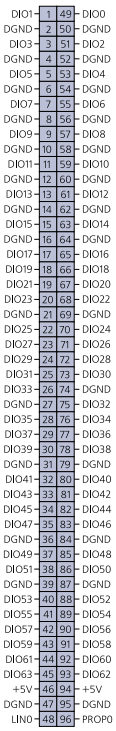
Parameter	Value
Prescaler	1 (21-bit)
Number of Channels	3
Resolution	24 bits
Maximum Frequency	16.5M S/s for external clock and 33M S/s for internal DSP clock
Minimum Frequency	0.0000002 S/s for internal clock, no low limit for external clock
Minimum Pulse Width	20 ns
Output High Level	2.0V min @ -4 mA
Output Low Level	0.5V max @ 4 mA
Protection	7 kV ESD, ±30V overshoot/undershoot
Input Low Voltage	0.0-0.8V
Input High Voltage	2.0-5.0V

ESSI Characteristics

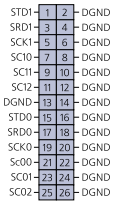
The Motorola 56301 DSP contains two fast Enhanced Synchronous Serial Interfaces. The PowerDAQ DIO board allows access to both. Each ESSI port contains three transmitters and one receiver and has a maximum operational speed of 15M bits/sec.

Output Drive Characteristics

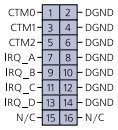
Parameter	Test conditions	Result
Output Drive Current	V_O = 2.5V	-32 mA per pin -180 mA per port
Output High Voltage	I_{OH} = -3 mA	3.5V typ, 4.8V max
Output High Voltage	I_{OH} = -15 mA	3.5V typ, 4.7V max
Output High Voltage	I_{OH} = -32 mA	2.4V min, 3.0V typ
Output Low Voltage	I_{OL} = 64 mA	0.2V typ, 0.55V max
I/O Power Off Leakage	$V_{I/O} \leq$ 4.5V	±1 µA max



PowerDAQ PDXI-DIO Digital I/O Connector (J1)



PowerDAQ PDXI-DIO ESSI Male Connector (J4)



PowerDAQ PDXI-DIO Counter/Timers/IRQ Lines Male Connector (J3)

Ordering Information

PDXI-DIO-64 .....64 digital I/O channels, 3 counter/timers, 2 ESSI ports, 4 high-speed IRQ lines (100 ns)

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

PDXI-DIO-64CT

Continuous High-Speed Digital Event Counter

Features

- Monitor high-speed digital inputs for long periods
- Two 24-bit counters track different inputs
- Peak input frequency 16.5 MHz
- Send counter values to a memory at rates to 1.6 MHz
- Also operates as standard DIO Series card

General Description

With the PDXI-DIO-64CT variation of our digital I/O board users can take advantage of special features available with the counter/timer subsystem. They can count external events on two inputs continuously and uninterrupted, while periodically sending the count readings to system memory or a disk file. They can do this for as long as they like (as long as memory can accommodate more readings). In normal operation without the -CT version, users must stop a counter, read its value and then reactivate it to continue operation; this pause is no longer necessary.

Users supply an external pulsed signal to the inputs of two 24-bit counters; the peak input frequency is approximately 16.5 MHz. At a user-defined intervals, at rates as high as 1.6 MHz, a third counter/timer issues a signal that triggers a read of the contents of each counter (there is a 30-nsec delay between reading the first and second counter) and then the subsystem sends this reading to the 1k-sample FIFO buffer on the DSP. Every time the buffer is half full (512 samples), the DSP sends the values to host memory or a disk file using Bus Mastering or DMA transfers. The counters continue incrementing until they reach their maximum count value (2^24 = 16,777,216 counts) at which time they roll over and start counting again from zero.

When not being used in this special counting mode, the card functions similar to the standard PDXI-DIO-64 card. Even better, the digital I/O lines are available for static I/O while the counters are working in CT mode.

Ordering Information

PDXI-DIO-64CT	64 digital I/O channels, high-speed event counts streaming (1.6M words/s)

PDXI-DIO-64ST

Continuous High-Speed Digital I/O Word Streaming

Features

- Stream digital words in or out for long periods without interruption
- Flexibility in assigning I/O ports as inputs or outputs
- Maximum input/output rate 1.6M words/sec
- Stream both inputs and outputs simultaneously
- Create outputs in Regenerate or Bus Master mode
- Also operates as standard DIO Series card

General Description

For those applications that require a long, continuous stream of high-speed digital input or output words even when operating under an operating system such as Windows, the DSP-based PDXI-DIO-64ST offers a powerful solution. With a configuration word you define the initial channel in an input- or output-channel sequence along with the total number of ports (that value must be a power of two: 1, 2, 4 or 8). Because each port supports 16 channels, the card can operate with as many as 64 digital I/O points in this mode. You can set these ports up as inputs or outputs, and the card allows the operation of both streaming inputs and outputs simultaneously.

All the inputs operate together at one rate, and all the outputs operate together at one rate, but the input and output rates need not be the same. You can clock these operations from either an internal or an external clock, and in either case the maximum rate for either digital inputs or digital outputs is 1.6M words/sec

When the card reads the digital words, it sends the results continually into the 1k-sample FIFO buffer in the DSP. Every time the buffer is half full (512 samples), the DSP sends the values to host memory or a disk file using Bus Mastering or DMA transfers.

When the card outputs digital words, it obtains data from one of two sources depending on the mode. In Regenerate mode, it continuously cycles through digital words stored in an onboard buffer (2k words standard with options as large as 64k words). In Buffered mode, you continuously download the words into the onboard memory in response to interrupt requests from the board. When generating digital outputs, the per-channel rate is the aggregate rate from system RAM or the disk file divided by the number of digital output channels.

When not being used in this special counting mode, the card functions similar to the standard PDXI-DIO-64 card. And when the digital I/O lines are working in this streaming fashion, the counter/timers are available to the user.

Ordering Information

PDXI-DIO-64ST	64 digital I/O channels, high-speed pattern generation and digital streaming

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

PDXI-DIO-64TS

Variable Programmable Timing Sequencer

Features

- Generate a continuous series of pulses or digital words
- Create outputs on all I/O ports enabled as digital outputs
- Regenerate and Buffered modes available
- Controlled with a 100-MHz DSP
- Each pulse or word varies from 1 µsec to 16 776 sec in 20-nsec increments
- Generates a optional CPU interrupt after execution of each Timing Sequencer command
- Also operates as standard DIO Series card

General Description

In some applications, it's necessary to generate a continually running series of digital pulses or words with strictly defined time intervals, and the PDXI-DIO-64TS Timing Sequencer board accomplishes this task with ease. Although it is possible to generate a user-defined digital pulse or output word with the standard PowerDAQ DIO boards, several factors come into play. First, you cannot generate a continual series of pulses of differing widths without having a small gap between them during which you reconfigure the digital-output subsystem with parameters for the following pulse. For some applications this gap is not acceptable. Furthermore, running high-speed digital outputs in Buffered mode requires considerable processor power, extensive interaction with a user program and the user must prepare a large amount of data to configure and control each output sequence.

Using specialized firmware running on the counter/timer integrated into the onboard DSP chip (a 100-MHz Motorola 56301), UEI has overcome this hurdle. With the PDXI-DIO-64TS you create a series of commands, each of which defines a precise time interval and the digital pattern to be generated during that interval. You store these commands in the form of entries in a Time Sequence List (TS List) that resides in an onboard buffer memory. The board supplies four 16-bit digital I/O ports, and when you have enabled one or more of them as outputs, an entry in the TS List defines the levels the selected digital output lines should assume (logic Hi or Lo) as well as exactly how long they should retain these states. That duration can range from 1 µsec to 16 776 sec with an accuracy of 20 nsec (time intervals longer than 0.5 sec require two entries to maintain that accuracy). After that time has elapsed, the card moves to the next entry in the TS List and immediately reconfigures its output lines accordingly. Following the execution of an entry in the TS List, the card can optionally send an interrupt to the host CPU. Note that it is possible to disable this special Timing Sequence feature and use the board as a standard PDXI-DIO-64 I/O card.

The number of entries possible in the TS List depend upon the selected operating mode. In Regenerate mode, you place entries in the on-board DSP buffer memory, which varies from 2k bytes (holding 256 entries) to an option with 64k bytes (holding 8192 entries). You can elect to run through these entries just one time or step through them repeatedly in a continuous cycle. In Buffered mode, you continuously download TS List entries into onboard memory in response to interrupt requests from the board. The data is moved in blocks of 128 entries at a maximum rate of 50k entries/sec.

Ordering Information

PDXI-DIO-64TS	64 digital I/O channels, variable pragrammable tiing sequencer

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP