

PowerDAQ CompactPCI/PXI Family

16-bit Analog Output Board



Features

- Analog outputs (choice of 8, 16 or 32 16-bit channels)
- Digital inputs (8 lines)
- Digital outputs (8 lines)
- Three 24-bit counters/timers
- Three clock/interrupt lines
- Channel list (64 locations)
- User defined power-on state
- Simultaneous channel update
- Onboard buffer size: 2k samples (upgradable to 32k samples)

PowerDAQ Software Suite

for Windows 9x/NT/2000/Me supports application development in Visual C++, Visual Basic, Delphi and C++ Builder.

- PowerDAQ for Linux/RTLinux
- ProfessorDAQ Lite Excel Add-In
- PowerDAQ for QNX (optional purchase)

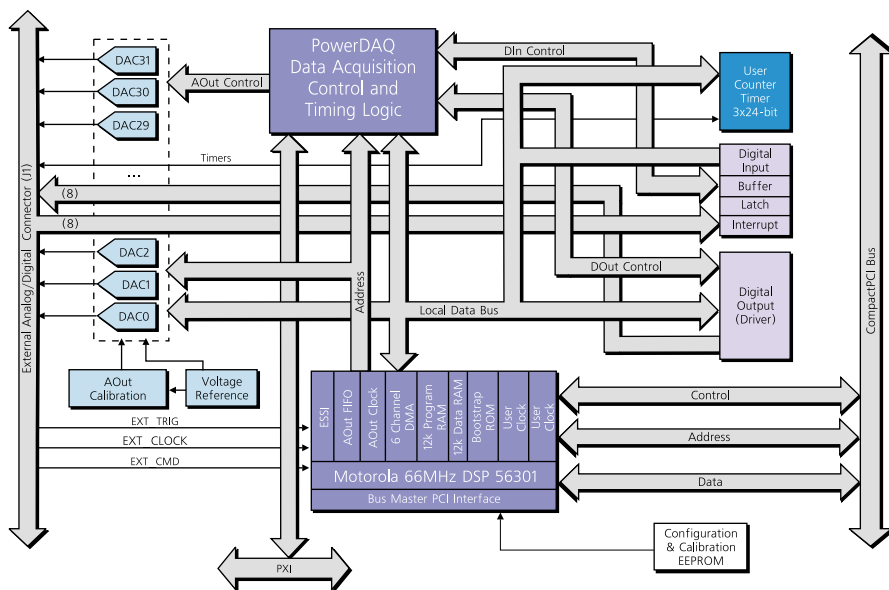
Also included at no cost are drivers for these applications: LabVIEW, Agilent VEE/VEE OneLAB, TestPoint, DASYLab, DIADem, MATLAB DAQ Toolbox

General Description

A member of UEI's PDXI family of CompactPCI-compatible cards, the PDXI-AO supplies as many as 32 independent 12-bit analog outputs on a C-sized card. Here you not only significantly increase the number of analog outputs, you also have 16 digital I/O lines and three counter/timers. With these functions, the PDXI-AO is well suited to implement complex closed-loop systems as well as handle motor control and many other industrial-automation tasks.

The card calibrates each analog output individually without using trim pots and instead relies on a special D/A-based scheme that stores calibration coefficients in EEPROM and loads them automatically upon power up. This method also keeps board outputs in a predefined user-programmable state upon system startup.

AOUT3 SENSE	1	49	AOUT3
AOUT2 SENSE	2	50	AOUT2
AOUT1 SENSE	3	51	AOUT1
AOUT0 SENSE	4	52	AOUT0
AGND	5	53	AGND
AOUT7 SENSE	6	54	AOUT7
AOUT6 SENSE	7	55	AOUT6
AOUT5 SENSE	8	56	AOUT5
AOUT4 SENSE	9	57	AOUT4
AGND	10	58	AGND
AOUT11 SENSE	11	59	AOUT11
AOUT10 SENSE	12	60	AOUT10
AOUT9 SENSE	13	61	AOUT9
AOUT8 SENSE	14	62	AOUT8
AGND	15	63	AGND
AOUT15 SENSE	16	64	AOUT15
AOUT14 SENSE	17	65	AOUT14
AOUT13 SENSE	18	66	AOUT13
AOUT12 SENSE	19	67	AOUT12
AGND	20	68	AGND
AGND	21	69	AGND
AGND	22	70	AGND
AGND	23	71	AGND
AGND	24	72	AGND
AGND	25	73	AGND
AGND	26	74	AGND
AGND	27	75	AGND
AGND	28	76	AGND
AGND	29	77	AGND
AGND	30	78	AGND
AGND	31	79	AGND
AGND	32	80	AGND
AGND	33	81	AGND
AGND	34	82	AGND
AGND	35	83	AGND
DGND	36	84	DGND
EXT_CMD	37	85	EXT_TRIGGER
TM2	38	86	EXT_CLOCK
TM1	39	87	TM2
DGND	40	88	DGND
DOUT0	41	89	DIN0
DOUT1	42	90	DIN1
DOUT2	43	91	DIN2
DOUT3	44	92	DIN3
DOUT4	45	93	DIN4
DOUT5	46	94	DIN5
DOUT6	47	95	DIN6
DOUT7	48	96	DIN7



PowerDAQ PDXI-AO Block Diagram

PowerDAQ PDXI-AO Analog/Digital Connector (J1)

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Technical Specifications

Analog Outputs

Parameter	Value
Number of Channels	8, 16, 32
Resolution	16 bits
Update Rate	100 kS/s per channel, up to 1600 kS/s aggregate throughput
DSP Buffer Size	2k samples (upgradable to 32k samples) (2 x 1k buffers in DSP memory)
Type of D/A	Double-buffered
Data Transfers	DMA, interrupts, software
Accuracy	± 3 LSB max
DNL	± 3 LSB max
Monotonicity Over Temperature	15 bits -40 to 85 °C
Gain Error	0.02%
Range	±10V
Output Coupling	DC
Output Impedance	0.15Ω max
Current Drive	±5 mA min
Capacitive Loads	180 pF min
Settling Time	10 μs to 0.003%
Slew Rate	10 V/μs
Gain Bandwidth	1 MHz
Noise	2 LSB RMS, 0–10000 Hz
Output Protection	Short to ground, ±15 V
Power-on state	0.0000V ±5 mV By default, user programmable
Gain drift	25 ppm/°C

Digital I/O

Parameter	Value
Number of Channels	8 inputs and 8 outputs
Compatibility	CMOS/TTL, 2 kV ESD protected
Power-on State	Logic Zero, default user programmable
Data Transfers	DMA, interrupts, software
Input Termination	4.7 kΩ pull-up to 5V
Output High Level	2.0V min @ -32 mA, 2.4V min @ -16 mA, 4.2V @ -2 mA
Output Low Level	0.55V max @ 64 mA
Input Low Voltage	0.0–0.8V
Input High Voltage	2.0–5.0V

Counter/Timer

Parameter	Value
Number of Channels	3
Resolution	24 bits
Maximum Frequency	16.5 MS/s for external clock and 33 MS/s for internal DSP clock
Minimum Frequency	2 Hz for internal clock, no low limits 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

Ordering Information

PDXI-AO-8/16	8-channel analog output, 16-bit, 100 kS/s per channel, 3 counter/timers, 16 digital I/O
PDXI-AO-16/16	16-channel analog output, 16-bit, 100 kS/s per channel, 3 counter/timers, 16 digital I/O
PDXI-AO-32/16	32-channel analog output, 16-bit, 100 kS/s per channel, 3 counter/timers, 16 digital I/O