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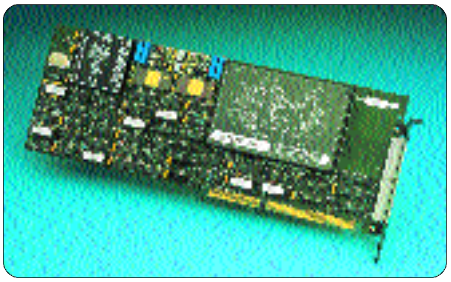
Find the *Measurement Computing / Data Translation DT2821* at our website: *Click HERE*

DT2821 Series

Analog and Digital I/O

The DT2821 Series is a family of high-speed, dual-channel DMA data acquisition boards for PC AT compatibles. By using two DMA channels, these boards provide continuous performance (gap-free) data transfers at the full throughput capability of the board–up to 250 kS/s. Each board provides two high-speed de-glitched analog outputs, eight digital inputs, and eight digital outputs. The channel gain list allows you to sample channels in non-sequential order or with different gains. Comprehensive software support allows the DT2821 Series to be programmed using a variety of languages and application packages.

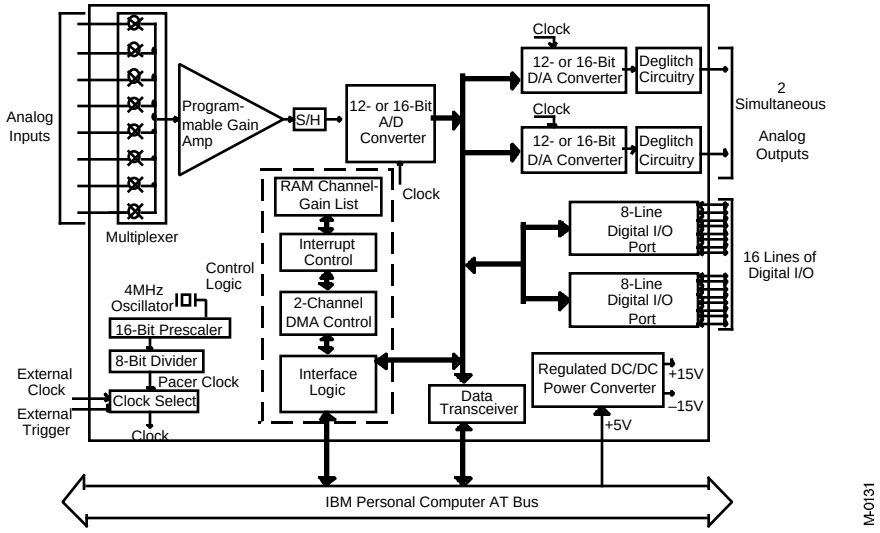
- Dual-DMA design allows high-speed continuous performance (no lost samples)
- Choose from 12- or 16-bit A/D or D/A resolution, high or low-level (20 mV full-scale) gain, A/D throughputs to 250 kS/s, or optional SSH for simultaneous sampling of up to eight inputs
- Analog input circuitry is housed in a cold-rolled steel module, and is powered from an onboard DC/DC converter to ensure accuracy
- Two de-glitched, independent analog outputs are provided with up to 130 kS/s throughputs and a resolution of up to 16 bits (depending on version)
- Sample input channels in any sequence, at any gain, at full throughput



Summary

A/D: 12- or 16-bits; 30 to 250 kS/s throughput; gains to 500; SSH available
D/A*: 2 deglitched DACs; 12- or 16-bits; 100 to 130 kS/s throughput per DAC
Digital I/O: 16 lines
Clocks: One programmable clock
Interface: Dual-channel DMA or programmed I/O; line interrupt

*DT2824-PGH and DT2824-PGL have no analog output.



Analog Outputs

	DACs	Resolution (bits)	Throughput (kHz)	Ranges (V @ ± 5 mA min)	Settling Time (µs)	Error (% of FSR)	Drift (ppm of FSR/°C)
DT2821*	2, deglitched	12 (.024% FSR)	130/DAC	0–5, 10 ± 2.5,5,10	5	± .012	± 10, Zero ± 30, Gain
DT2823, DT2829	2, deglitched	16 (.0015% FSR)	100/DAC	±10	10	± .0023	± 10, Zero ± 30, Gain

* All DT2821 versions, including the DT2825, DT2827, and the DT2828

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Analog Inputs

	Resolution (bits)	Throughput (kS/s)	Input Channels	Gain	Ranges (V)	System Error (% of FSR)	Conversion Time (µs)	CMRR (dB @ 60 Hz)	S/H Aperture Uncertainty (ns)	Max. Input Volt. Protection (On/Off)
DT2821	12 (.024% FSR)	50	16SE/8DI*	1,2,4,8	0–1.25, 2.5, 5, 10 ±1.25, 2.5, 5, 10	± .03, G=1 ± .05, G=8	10	80	10	±35/± 20
DT2824-PGH	12 (.024% FSR)	50	16SE/8DI*	1,2,4,8	0–1.25, 2.5, 5, 10 ±1.25, 2.5, 5, 10	± .03, G=1 ± .05, G=8	10	80	10	±35/± 20
DT2824-PGL	12 (.024% FSR)	50, G≤10 3.8, G≥100	16SE/8DI*	1,10,100,500	0–.02, .1, 1, 10 ± .02, .1, 1, 10	± .03, G=1 ± .10, G=500	10	80	10	±35/± 20
DT2821-F-16SE **DT2821-F-8DI**	12 (.024% FSR)	150	16SE 8DI	1,2,4,8	0–1.25, 2.5, 5, 10 ±1.25, 2.5, 5, 10	.03, G=1 .07, G=8	4	— 80	.5	±27/± 12
DT2821-G-16SE **DT2821-G-8DI**	12 (.024% FSR)	250	16SE 8DI	1,2,4,8	0–1.25, 2.5, 5, 10 ± .625, 1.25, 2.5, 5, 10	.03, G=1 .07, G=8	2.5	— 80	.2	±16/± 1
DT2823	16 (.0015% FSR)	100	4DI	1	±10	± .003	6	80	.2	±27/± 12
DT2825	12 (.024% FSR)	50, G≤10 2.5, G≥100	16SE/8DI*	1,10,100,500	0–.02, .1, 1, 10 ± .02, .1, 1, 10	± .03, G=1 ± .10, G=500	10	80	10	±35/± 20
DT2827	16 (.0015% FSR)	100	4DI	1	± 10	± .003	6	80	.2	±27/± 12
DT2828	12 (.024% FSR)	100	4SE, SS&H	1	0–10 ± 10	± .04	4	—	±5	±31/± 16
DT2829	16 (.0015% FSR)	30	8SE, SS&H	1	± 10	± .006	30	—	5	±18/± 18

* With multiple DT727 panels, up to 256SE/128DI.

Specifications

All specifications are typical at 25° C and rated voltage, unless otherwise specified.

DIGITAL I/O

Number of Lines
16, organized as two 8-line ports that can be set for input or output

Fanout
30 LSTTL loads

Input Load
1 LSTTL load

PACER CLOCK

Function
Pacer clock initiates A/D or D/A conversions; clock is started by software trigger or external trigger.

Usable Range
From 4 µs (250kS/s) to 2 s (.5 Hz)

Description
Pacer clock consists of a 4.00 MHz oscillator (.25 µs increments), a prescaler (divides oscillator by powers of two from 20 to 215), and an 8-bit divider (divides output of prescaler by integers from 1 to 255).

OPERATING MODES

A/D

Channel/Gain Selection—16-location channel-gain list

Operation—single conversion; single scan (once through channel-gain list); continuous scan (continuous through channel-gain list)

Data Transfer—programmed I/O; dual-channel (Continuous Performance) DMA

D/A

Channel Selection—either channel singly or both channels simultaneously

Data Transfer—programmed I/O; dual-channel (Continuous Performance) DMA

GENERAL

Interface
IBM PC AT bus or EISA Bus; I/O mapped, 10-bit I/O address; 16-bit data path; one or two DMA channels

Interrupt—one line, jumper-selected level; source: A/D, D/A error; A/D done; D/A ready; A/D scan done; A/D, D/A DMA done

Power Requirements
+5 V @ 2.4 A typical; low-noise ±15 V generated by onboard DC/DC converter

Physical/Environmental
Dimensions—full-size PC AT board mechanically compatible with ISA system slots only; 12.07 x 33.66 x 1.9 (4.75 in. x 13.25 in. x .5 in.); 12.86 x 34.29 x 1.91 (5.06 in. x 13.5 in. x .75 in.) including bracket

Temperature—operating: 0 to 70° C; storage: –25 to 70° C

Relative Humidity—to 95%, non-condensing

Ordering Summary

All Data Translation products are covered by a 1-year warranty. For pricing information, see a current price list, visit our web site, or contact your local reseller.

DT2821 Series boards ship with a DT-Open Layers device driver for Windows 95/98, example programs, diagnostics, and a comprehensive user manual.

- DT2821–50 kS/s, 12-bit A/D, PGH
- DT2824-PGH–High-level, A/D only
- DT2824-PGL–Low-level, A/D only
- DT2821-F-16SE–16 SE, 150 kS/s, A/D
- DT2821-F-8DI–8 DI, 150 kS/s, A/D
- DT2821-G-16SE–16 SE, 250 kS/s, A/D
- DT2821-G-8DI–8 DI, 250 kS/s, A/D
- DT2823–16-bit, A/D; 16-bit D/A
- DT2825–Low-level, A/D
- DT2827–16-bit, A/D; 12-bit D/A
- DT2828–SSH, 12-bit, 100 kS/s A/D
- DT2829–SSH, A/D; 16-bit D/A

Accessories

- DT707–Screw terminal panel and cable
- STP-EZ (DT780)–Screw terminal panel and cable
- DT707-T–Panel and cable for thermocouples
- STP-EZ-T (DT780-T)–Panel and cable for thermocouples
- DT707A–Panel and cable
- DT707A-T–Panel and cable for thermocouples
- DT727–Channel expansion panel and cable
- DT727-T–Thermocouple channel expansion panel and cable

Software

The following products include a copy of the software, a single-user license, and a user manual. All software is supplied on CD-ROM, except as noted.

- HP VEE with DT VPI visual programming software Version 5.0 for Windows 95/98 SP1950-CD
- HP VEE Lab with DT VPI visual programming software version 5.0 for Windows 95/98 SP1950-LAB
- TestPoint software for designing test, measurement and D/A applications for Windows 95/98 SPTPXX–CD (see page 32 for details)
- DTx-EZ visual programming tools for Visual Basic and Visual C++ for Windows 95/98 SP0970-CD
- DataAcq SDK Software Development Kit for Windows 95/98 SP0945-CD
- DT-LV Link data acquisition connection to LabVIEW for Windows 95/98, on 3.5 in. 1.4 MB disk SP0810-CL

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