SPECIFICATIONS

PC104-DAS16JR/12
PC104-DAS16JR/16

Analog Input, Digital I/O, Counters

Power Consumption

+5VDC quiescent
PC104-DAS16Jr/12	140 mA typical, 230 mA max
PC104-DAS16Jr/16	145 mA typical, 205 mA max

+ 5VDC Operating (A/D converting to FIFO)
PC104-DAS16Jr/12	250 mA typical, 375 mA max
PC104-DAS16Jr/16	235 mA typical, 350 mA max

Analog Input Section

A/D converter type
PC104-DAS16Jr/16	AD7805
PC104-DAS16Jr/12	AD7800

Resolution
PC104-DAS16Jr/12	12 bits
PC104-DAS16Jr/16	16 bits

Number of channels — 8 differential or 16 single-ended, switch-selectable

Input ranges
PC104-DAS16Jr/12	±10V, ±5V, ±2.5V, ±1.25V, ±0.625V, 0 to 10V, 0 to 5V, 0 to 2.5V, 0 to 1.25V, fully programmable
PC104-DAS16Jr/16	±10V, ±5V, ±2.5V, ±1.25V programmable in Bipolar mode OR 0 to 10V, 0 to 5V, 0 to 2.5V, 0 to 1.25V programmable in Unipolar mode

Polarity — Unipolar/Bipolar, switch-selectable

A/D Pacing — Programmable: internal counter, external source (Din 0 / Trigger) or software polled

A/D Trigger sources — External polled gate trigger (DIn 0)

A/D Triggering Modes
Digital: — Gated pacer, software polled. (Gate must be disabled by software after trigger event.)

Data transfer — From 512 sample FIFO via interrupt, DMA or software polled

DMA — Channel 1 or 3, switch-selectable

DMA enable — Programmable

A/D conversion time
PC104-DAS16Jr/12	3.3 µs
PC104-DAS16Jr/16	10 µs

Throughput
PC104-DAS16Jr/12	150 kHz
PC104-DAS16Jr/16	100 kHz

Accuracy
PC104-DAS16Jr/12	0.01% of reading, ±1LSB
PC104-DAS16Jr/16	0.003% of reading, ±1LSB

Integral Linearity error
PC104-DAS16Jr/12	±1 LSB
PC104-DAS16Jr/16	±1.5 LSB (±3LSB on 1.25V ranges)

Differential Linearity — ±1 LSB

No missing codes guaranteed
PC104-DAS16Jr/12	12 bits
PC104-DAS16Jr/16	16 bits

Gain drift (A/D specs)
PC104-DAS16Jr/12	±6 ppm/°C
PC104-DAS16Jr/16	±7 ppm/°C

Zero drift (A/D specs)
PC104-DAS16Jr/12	±1 ppm/°C
PC104-DAS16Jr/16	±2 ppm/°C

Common Mode Range   ±10V
CMRR @ 60 Hz   70 dB
Input leakage current (@ 25 deg C)   ±20 nA
Input impedance   10 Mohms min
Absolute maximum input voltage   ±35V

Digital I/O Section

Digital type   FPGA
Configuration   Two ports, 4 bits each, 4 input and 4 output
Input low voltage   0.8V max
Input high voltage   2.0V min
Output low voltage (IOL = 4 mA)   0.32V max
Output high voltage (IOH = −4 mA)   3.86V min
Absolute maximum input voltage   −0.5V , +5.5V
Interrupts   Programmable: levels 2 to 7
Interrupt enable   Programmable
Interrupt sources   End-of-conversion, DMA terminal count

Counter Section

Counter type   82C54

Configuration   3 down-counters, 16 bits each

Counter 0 - Independent user counter
- Source: Programmable (external or 100 kHz internal source)
- Gate: Available at connector (DIn 2)
- Output: Available at connector (Ctr 0 Out)

Counter 1 - ADC Pacer Lower Divider
- Source: Jumper-selectable 1/10 MHz
- Gate: Tied to Counter 2 gate, can be program-enabled at user connector (DIn 0 / Trigger).
- Output: Chained to Counter 2 Clock.

Counter 2 - ADC Pacer Upper Divider
- Source: Counter 1 Output.
- Gate: Tied to Counter 1 gate, programmable source.
- Output: Programmable as ADC Pacer clock, hardwired to user connector (Ctr 2 Out)

Clock input frequency	10 MHz max
High pulse width (clock input)	30 ns min
Low pulse width (clock input)	50 ns min
Gate width high	50 ns min
Gate width low	50 ns min
Input low voltage	0.8V max
Input high voltage	2.0V min
Output low voltage	0.4V max
Output high voltage	3.0V min

Crystal oscillator
Frequency	10 MHz
Frequency accuracy	100 ppm

Environmental

Operating temperature range	0 to 50°C
Storage temperature range	−40 to 100°C
Humidity	0 to 90% non-condensing