KPCI-1802HC

ANALOG INPUTS

NUMBER OF CHANNELS:

32 Differential or 64 Single Ended; Software Configurable

A/D FIFO BUFFER SIZE:

2048 Samples

CHANNEL GAIN QUEUE LENGTH:

64 Entries

A/D RESOLUTION:

12 Bits

INPUT GAIN AND RANGE:

Gain	Range (Bipolar)	Range (Unipolar)
1	±10V	0 – 10V
2	±5V	0 – 5V
4	±2.5V	0 – 2.5V
8	±1.25V	0 – 1.25V

INPUT RANGE SELECTION:

Software selectable via channel gain queue entry

INPUT OVERVOLTAGE:

±15V continuous, powered or unpowered.

INPUT BIAS CURRENT

±40nA maximum @25°C; ±60nA max. over operating range.

INPUT IMPEDANCE;

>100MΩ or greater in parallel with 90pF or less, all gains.

SINGLE CHANNEL THROUGHPUT:

333kS/s.

SCANNING THROUGHPUT:

(multiple channels scanned at the same gain)

Gain	Throughput (Bipolar)	Throughput (Unipolar)
1	312.5kS/s	312.5kS/s
2	312.5kS/s	312.5kS/s
4	312.5kS/s	312.5kS/s
8	312.5kS/s	312.5kS/s

LINEARITY:

Integral: ±1 LSB Max.
Differential: ±1 LSB Max.

ERROR:

±0.02% Reading ±1LSB max. for gains < 250, @25°C (typical)

TEMPERATURE COEFFICIENTS:

Offset – Unipolar: ±10 μV/°C ± (14 μV/°C ÷ Gain) (typical)
Offset – Bipolar: ±10 μV/°C ± (12 μV/°C ÷ Gain) (typical)
Gain: ±20ppm/°C (typical)

Bipolar Input Error							
	Resolution (V)	25°C ± 5°C		25°C ± 25°C		Noise (counts)	
Range		%FSR	%RDG	%FSR	%RDG	p-p (Typ.)	rms
±10 V	0.004883	0.050%	0.030%	0.054%	0.070%	2	0.1
±5 V	0.002441	0.050%	0.030%	0.057%	0.070%	2	0.1
±2.5V	0.001221	0.051%	0.030%	0.062%	0.070%	2	0.2
±1.25V	0.00061	0.053%	0.030%	0.072%	0.070%	4	0.4

Unipolar Input Error							
	Resolution (V)	25°C ± 5°C		25°C ± 25°C		Noise (counts)	
Range		%FSR	%(RDG-(FSR/2))	%FSR	%(RDG-(FSR/2))	p-p (Typ.)	rms
0 – 10 V	0.002441	0.026%	0.030%	0.030%	0.070%	2	0.1
0 – 5 V	0.001221	0.026%	0.030%	0.033%	0.070%	2	0.2
0 – 2.5V	0.00061	0.027%	0.030%	0.038%	0.070%	4	0.4
0 – 1.25V	0.000305	0.029%	0.030%	0.048%	0.070%	8	0.8

Note: Accuracies and r.m.s. calculations are based on an average of 5000 samples. Add noise to get maximum uncertainty of a single sample. "FSR" = "Full Scale Range". "RDG" = "Reading".

COMMON MODE REJECTION (TYPICAL):

Gain = 1; 74dB DC - 60 Hz
Gain = 2,4; 79dB DC - 60 Hz
Gain = 8; 84dB DC - 60 Hz

DATA TRANSFER MODES:

DMA (PCI Bus Master), Interrupt (Target-mode transfer), Polled (Target-mode transfer)

ANALOG OUTPUTS

NUMBER OF CHANNELS:
Two
RESOLUTION:
12 Bits
RANGE:
±10V
ACCURACY:
± 5mV, typical into High Impedance; Output impedance = 4 Ohms.
OUTPUT CURRENT:
± 5 mA max.
MAXIMUM CAPACITIVE LOAD:
100µF
DATA TRANSFER MODES:
DMA (PCI Bus Master), Interrupt (Target-mode transfer), Polled (Target-mode transfer)
D/A FIFO BUFFER SIZE:
16 Samples

CLOCK/TIMER

INTERNAL PACER CLOCK RATE:
333 kHz, max.
0.0012 Hz, min.
EXTERNAL PACER CLOCK RATE:
333kHz, max.
EXTERNAL PACER CLOCK PULSE WIDTH:
10 ns, min.
BURST CLOCK RATE:
333 kHz, max.
TRIGGER:
External digital; pre, post, about modes
Internal software; start, stop, pre, post, about modes.
EXTERNAL TRIGGER PULSE WIDTH:
10ns, min.

DIGITAL I/O

INPUT BITS:
4; Two share connector pins for external pacer and trigger.
INPUT LOW:
V_{IL} = 0.8 V max.; I_{IL} = -0.5mA max.
INPUT HIGH:
V_{IH} = 2.0 V min.; I_{IH} = -350μA max.
OUTPUT BITS:
Eight, with strobe.
OUTPUT LOW:
V_{OL} = 0.5 V max.; I_{OL} = 4 mA max.
OUTPUT HIGH:
V_{OH} = 2.7 V min.; I_{OH} = -400μA max.
DOSTRB PULSE WIDTH:
300nsec, typ.; Data latched on rising edge.
DATA TRANSFER MODE:
Target mode.

POWER

POWER INPUT:
+5 V; 430mA typ., 870mA max.
+12 V; 300mA typ., 450 mA max.
POWER OUTPUT:
5 V; 1.0A max. (May also be limited by computer or bus capability)
±15 V; 30mA max.

ENVIRONMENT

TEMPERATURE, OPERATING:
0°C to 50°C
TEMPERATURE, NONOPERATING:
-20°C to 70°C
HUMIDITY:
0 to 95% Relative (non-condensing), operating or nonoperating.
DIMENSIONS:
8 in L × 4.25 in. H × 0.75 in. D

ACCESSORIES

TERMINATION:

STP-100
CONN-1800HC
STA-1800HC

SIGNAL CONDITIONING / EXPANSION:

MB-Series

CABLES:

CAB-1800
CAB-1801
CAB-1802
CAB-1800/S (Shielded cable required for CE emissions test)
CAB-1801/S
CAB-1802/S