PC-CARD-DAC08

Specifications

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Typical for 25 °C unless otherwise specified.

Specifications in *italic* text are guaranteed by design.

Analog output

Table 1. Analog output specifications

D/A converter type	MAX547 13-bit Octal MDAC
Resolution	12 bits. LSB of converter not used.
Number of channels	Eight voltage output, Single-ended
Output Range	±5V. 1 LSB = 2.44 mV
D/A pacing	Software Paced
Throughput	System-dependent. Using the Universal Library programmed output function (cbAOut()) in a loop, in Visual Basic, a typical update rate of 50 KHz (±3 KHz) can be expected. This rate was measured on a 500 MHz Pentium III based PC running under Windows 98.
Data transfer	Programmed I/O
D/A trigger modes	Software
Slew rate	± 1.6 V/µS min
Settling time (to ½ LSB of FSR)	8.0 µS typical
Current drive	±1 mA min
Output short-circuit duration	Indefinite @ 15 mA
Output coupling	DC
Output impedance	0.1 Ω max
Miscellaneous	▪ Double buffered output latches ▪ Update in DAC pairs (for example DAC 0/1, 2/3...) or all DACs simultaneously ▪ Coding: Offset Binary (0 code = -FS, 4095 code = +FS) ▪ Power up and reset, all DAC's cleared to 0 V, ± 10.2 mV typical ▪ 'CLEAR' command to reset all DAC's to 0 V, ± 10.2mV typical in software

Accuracy

Table 2. Analog output accuracy specifications

Absolute Accuracy (SW calibrated)	±4.0 LSB
Typical Accuracy (SW calibrated)	±1.8 LSB

Accuracy components (uncalibrated)

Table 3. Accuracy component specifications

Gain Error	Offset Error	DLE	ILE
±40 max, ±20.0 typical	±12.0 max, ±3.0 typical	±0.5 max, ±0.3 typical	±2 max, 0.5 typical

Total board error is a combination of gain, offset, integral linearity and differential linearity error. The theoretical worst-case error of the board may be calculated by summing these component errors. Worst case error is realized only in the unlikely event that each of the component errors are at their maximum level, and causing error in the same direction. Each PC-CARD-DAC08 is tested at the factory to assure the board's overall software-calibrated error does not exceed ±4.0 LSB.

Typical accuracy is derived directly from the various component typical errors. This typical error calculation for a SW calibrated PC-CARD-DAC08 yields ±1.8 LSB. However, this again assumes that each of the errors contributes in the same direction and the ±1.8 LSB specification is quite conservative.

Digital input / output

Table 4. DIO specifications

Digital type	FPGA
Configuration	Two ports, four bits each. Programmable as eight input, eight output, or four input and four output
Input low voltage	*0.8 V max*
Input high voltage	*2.0 V min*
Output low voltage (IOL = 4 mA)	*0.23 V max*
Output high voltage (IOH = –4 mA)	*3.86 V min*
Absolute maximum input voltage	*–0.5 V , +5.5 V*
Power-up / reset state	Input mode (high impedance)
Interrupt enable	Programmable
Interrupt source	External (EXTERNAL INTERRUPT), falling edge triggered

Power consumption

Table 5. Power consumption specifications

+5 V quiescent	
Normal operation	42 mA typical, 110 mA max
CIS read	57 mA typical, 135 mA max

Environmental

Table 6. Environmental specifications

Operating temperature range	0 to 70 °C
Storage temperature range	-40 to 100 °C
Humidity	0 to 95% non-condensing

Mechanical

Table 7. Mechanical specifications

Card dimensions	PCMCIA type II: 85.6 mm (L) x 54.0 mm (W) x 5.0 mm (H)

Connector and pin out

Table 8. Connector specifications

Connector type	Honda 26-pin mini D-type
Connector compatibility	Translates to 37D pin out using PC-CARD-C37F/26
Compatible accessory products	CIO-MINI37 SCB-37

Table 9. Connector pin out

Pin	Signal Name	Pin	Signal Name
1	GND	14	EXTERNAL INTERRUPT IN
2	DIGITAL I/O 0	15	DIGITAL I/O 1
3	DIGITAL I/O 2	16	DIGITAL I/O 3
4	DIGITAL I/O 4	17	DIGITAL I/O 5
5	DIGITAL I/O 6	18	DIGITAL I/O 7
6	PC +5V OUT	19	D/A OUT 0
7	GND	20	D/A OUT 1
8	GND	21	D/A OUT 2
9	GND	22	D/A OUT 3
10	GND	23	D/A OUT 4
11	GND	24	D/A OUT 5
12	GND	25	D/A OUT 6
13	GND	26	D/A OUT 7

Table 10. PC-CARD-C37F/26 user connections on 37D

Pin	Signal Name	Pin	Signal Name
1	GND	20	D/A OUT 1
2	EXTERNAL INTERRUPT IN	21	GND
3	GND	22	D/A OUT 2
4	DIGITAL I/O 0	23	GND
5	DIGITAL I/O 1	24	D/A OUT 3
6	DIGITAL I/O 2	25	GND
7	DIGITAL I/O 3	26	D/A OUT 4
8	DIGITAL I/O 4	27	GND
9	DIGITAL I/O 5	28	D/A OUT 5
10	DIGITAL I/O 6	29	GND
11	DIGITAL I/O 7	30	D/A OUT 6
12	GND	31	GND
13	GND	32	D/A OUT 7
14	PC +5V OUT	33	GND
15	GND	34	N/C
16	GND	35	N/C
17	GND	36	N/C
18	D/A OUT 0	37	N/C
19	GND		

Note 1: Pins 19, 21, 23, 25, 27, 31, and 33 connect to pin 1 inside the 37D housing.

If you remove the 37-pin connector (P2) from the PC-CARD-C37F/26 cable assembly and replace it with a different user connector, make sure that the wiring of the replacement connector adheres to the twisted-pair wire pairings listed in the following table.

Table 11. Wire run list C3726 — P1 (Honda) to P2 (37D)

P1 (Honda)	Twisted pair wire	P2 (37D)	P1 (Honda)	Twisted pair wire	P2 (37D)
1	BLK	1	11	BLK	16
20	BLU	20	17	RED	9
2	RED	4	12	YEL	29
8	BLU	3	15	RED	5
3	BLK	6	13	BLK	17
16	GRN	7	22	YEL	24
4	WHT	8	14	ORN	2
5	BLK	10	21	RED	22
6	GRN	14	23	RED	26
25	RED	30	18	WHT	11
7	BLK	12	19	RED	18
26	ORN	32	24	BRN	28
9	BLK	13	_	SHIELD	33
10	BRN	15			

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