

PCC2 – Digital and Analogue Interface Card



Key Features:

- PLX PCI9052 PCI interface chip
- 8255 Programmable Peripheral Interface (PPI) providing 24 configurable digital Input/Output lines.
- 8253 Counter/Timer Circuit (CTC) providing 3-16 bit counters/timers.
- 8 Channel 8 bit Analogue to Digital Converter (ADC), voltage range 0-5V.
- 2 Channel 8 bit Digital to Analogue Converter (DAC), voltage range 0-5V.

The PCC2 Internal Digital and Analogue Interface Card is PCI architecture compliant. PCI Cards are dynamically allocated at start-up, rather than being determined in hardware on the card.

The 8255 is a general purpose programmable peripheral interface (PPI). The device has twenty four I/O lines arranged as three ports A, B and C.

- **Port A** consists of one 8-bit data output latch/buffer and one data input buffer.
- **Port B** consists of one 8-bit data output latch/buffer and one data input buffer.
- **Port C** consists of one 8-bit data output latch/buffer and one input buffer. This can be split under mode control into two 4-bit ports.

The 8255 has three main modes of operation, which may be applied to the I/O lines in two groups of twelve. On application of the power, or when the chip is reset, all lines are configured as inputs and must then be initialised to the user's requirements.

The 8253 is a programmable counter/timer chip with three independent 16-bit Counter Timer Channels (CTCs). Multiple modes are available, programmed in software, and each CTC can be clocked at up to 5MHz. CTCs 0, 1 and 2 are functionally identical and each have two inputs, clock (CLK) and gate (GATE) and one output (OUT). The primary use of CTCs is to generate accurate control cycles that do not require software supervision, especially in non real-time operating system environments. These control cycles typically involve counting, accurate timing or generating output waveforms.

CTCs have a number of applications:

- Programmable Rate Generator
- Event Counter
- Binary Rate Multiplier
- Real Time Clock
- Digital One-Shot
- Complex Motor Controller.

The DAC8228 is a dual 8-bit Digital to Analogue Converter generates two voltage outputs in the range 0-5v. The ADC0848 is an 8-bit successive approximation Analogue to Digital Converter. The in-built eight channel multiplexer can be software configured for single ended, differential or pseudo-differential modes of operation. The maximum throughput time for an 8-bit conversion is 40µs (25khz).

Specification

Power Supply Requirements	+ 5V from PCI Bus + 5V to 50-way connector max current draw 500 mA
Connector	All I/O signals are available via a 50-way connector.
Digital Ports	8255 Interface Chip 3 x 8-bit Ports A, B, C Ports A and B configurable as 8-bit Input or Output Port C configurable as MSB 4-bit Input or Output LSB 4-bit as Input or Output with software provided or programmable as individual bits
Counter Timer	8253 3 separate timers configurable in terminal count, one shot, rate generator and square waveform rate generator
Analogue to Digital Converter	ADC0848 8-Channel, 8-bit I/P Channel and modes differential, Single-Ended, Pseudo select by data bits 0-3 Conversion time typically 30 μ s (33khz) Resolution $\pm \frac{1}{2}$ LSB
Digital to Analogue Converter	DAC8228 2-Channel, 8-bit Interface Timing 70ns (through PLX 9052 250ns) (4mhz) Relative Accuracy $\pm \frac{1}{2}$ LSB
On Board Clock Frequency	4MHZ

Ordering Information

Model Number:

PCC2

Consists of:

1 x PCC2 PCI Card

1 x Software CD – contains:

- User software, drivers, programming examples for Delphi, Visual Basic, C++, Matlab, Simulink and LabView

Microsoft Windows version 95, 98, ME, NT, 2000 and XP Compatible

Notes.

1. *Specification is subject to change without notice.*
2. *All dimensions are in mm unless otherwise stated*

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