PMC Modules

PMC464 Digital I/O and Counter/Timers

The PMC464 module provides 64 digital input/ output channels and four 16-bit multifunction counter/timers.

Sixteen digital I/O channels can be programmed as an input or an output on an individual channel basis. The other 48 digital input/output channels are programmed as inputs or outputs on an 8-bit port basis. All inputs support change of state and high/low level transition interrupts.

Four 16-bit multifunction counters/timers can be configured for pulse width modulated output, watchdog timer, event counter, frequency measurement, pulse width measurement, period measurement, or one shot pulse output. The four 16-bit counters can also be configured into two 32-bit counter/timers.
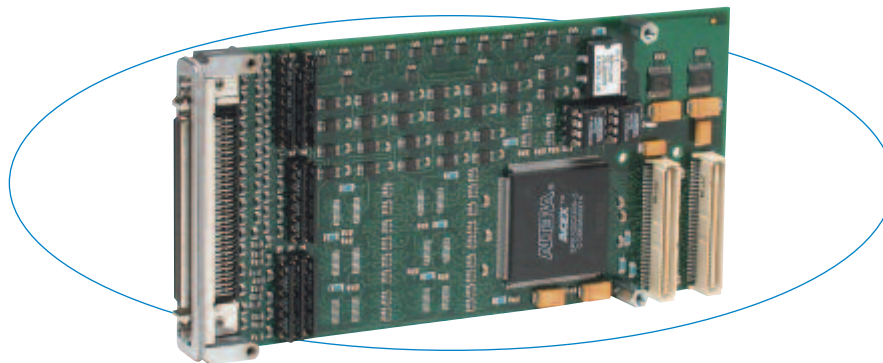
Features

Digital I/O
- 64 digital input/output channels:
  - 16 individually programmable channels (15 channels for 464R
  - 48 channels configured on an 8-bit port basis

- Programmable change of state/level interrupts

- Input signal filtering debounce logic

Counter/Timer
- Four 16-bit or two 32-bit counter/timer channels (control lines shared with 16 TTL I/O channels)

- Six operating modes:
  - Pulse width modulation
  - Watchdog timer
  - Event counter
  - Frequency measurement
  - Pulse width or period measurement
  - One-shot and repetitive one-shot

- TTL-compatible thresholds

- Power-up and system reset is failsafe

This module saves money and PMC slots by combining digital I/O, and counter/timer functions on a single card.

Specifications

Digital I/O
I/O channel configuration:
  64 bidirectional TTL transceivers.

  Channels 0-47: Direction controlled on a port basis.
  Channels 48-63: Direction controlled independently (shared as counter/timer control signals). (48-62 for 464R)

Reset/power-up condition: All channels default to input.

Digital Input

Input voltage range: 0 to 5V DC.

Input signal threshold (channels 0-47):
  Low to high: 2.0V typical.
  High to low: 0.8V typical.

Input signal threshold (channels 48-63):
  Low to high: 3.5V typical.
  High to low: 1.5V typical.

Input response time: 10 nanoseconds, typical.

Interrupts: 64 channels of interrupts for high-to-low, low-to-high, or any change-of-state event types.

Debounce: Selectable for each channel. User-selectable (5.6µS, 50.4µS, 408.8µS, or 3.276mS).

Digital Output

Output voltage range: 0 to 5V DC.

Output ON current range (channels 0-47): -15 to 64mA.

Output ON current range (channels 48-63): -32 to 32mA.

Output pullups: 4.7K ohm socketed resistors.

Turn on time: 10nS.

Turn off time: 10nS.

Counter/Timers
Counter/timer configuration: Four 16-bit counters can be configured into two 32-bit counters.

Functions: Pulse width modulation, watchdog timer, event counting, frequency measurement, period measurement, pulse width measurement, and one-shot/repetitive.

Counter input: Each counter has an IN_A, IN_B, and IN_C input port. These TTL input signals control start/stop, reload, event input, external clock, trigger, and up/down operations.

Counter output: Each counter has one output signal. The TTL output is used for waveform output, watchdog active indi- cator, or 1.6µS pulse upon counter function completion. Programmable as active high or low.

Clock frequencies: Selectable for 20MHz, 10MHz, 5MHz, 2.5MHz, 1.25MHz or external up to 8MHz.

Minimum I/P event: 100nS (debounce disabled).
Minimum pulse measurement: 100nS (debounce disabled).
Minimum period measurement: 200nS (debounce disabled).
Minimum gate/trigger pulse: 100nS (debounce disabled).

Board crystal oscillator: 20MHz.

PMC Compliance
Conforms to PCI Local Bus Specification, Revision 2.2 and CMC/PMC Specification, P1386.1.

4K Memory Space Required: One Base Address Register.

Signaling: 5V Compliant, 3.3V Tolerant.

Environmental
Operating temperature: 0 to 70°C (PMC464) or -40 to 85°C (PMC464E)

Storage temperature: -55 to 105°C.

Relative humidity: 5 to 95% non-condensing.

MTBF: 1,750,590 hrs. at 25°C, MIL-HDBK-217F, notice 2.

Power: 160mA at +5V, typical.

Ordering Information

PMC464: Digital I/O and counter/timer module

PMC464E: Same as PMC464 plus extended temp. range

PMC464R: Digital I/O and counter/timer module with rear I/O connector

PMC464RE: Same as PMC464R plus extended temp. range

Software *(see software documentation for details)*
PMCSW-API-VXW: VxWorks® software support package
PCISW-API-QNX: QNX® software support package
PCISW-API-WIN: Windows® DLL software support
PCISW-LINUX: Linux™ support (website download only)

Accessories *(see accessories documentation for details)*
5025-288: Termination panel, SCSI-3 connector, 68 screw terminals

5028-432: Cable, shielded, SCSI-3 connector both ends

All trademarks are the property of their respective owners.

Acromag, Inc. • **PO Box 437, Wixom, MI 48393** • **Phone: 248-295-0310** • **Fax: 248-624-9234** • **solutions@acromag.com** • **www.acromag.com**

8400-351 Printed in USA 6/05 Copyright © 2005 Acromag, Inc. Data subject to change without notice