Acromag ®
THE LEADER IN INDUSTRIAL I/O

AcPC464
Digital I/O and
Counter/Timers

The AcPC464 module provides 64 digital input/ output channels and four 16-bit multifunction counter/timers.

All 64 I/O channels, when set as inputs, support configuration for interrupts on either a change-of-state or on a high-to-low or low-to-high transition. A debounce timer is selectable to help filter out false transitions.

Four 16-bit multifunction counters/timers are configurable 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
  - 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
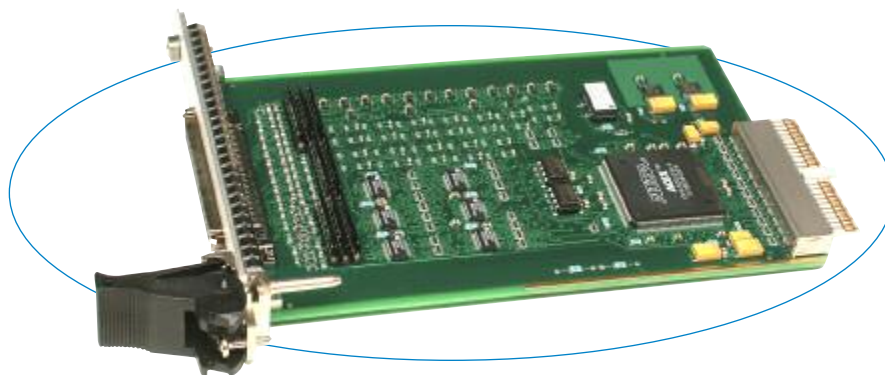
This module saves money and CompactPCI slots by combining digital I/O and counter/timer functions on a single card.

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).

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.

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 ($5.6\mu S$, $50.4\mu S$, $408.8\mu S$, 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.

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 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 indicator, or $1.6\mu S$ pulse upon counter function completion. Programmable as active high or low.

Counter 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).

CompactPCI bus Compliance
Meets PCI spec. V2.2 and PICMG 2.0, R3.0.

Data transfer bus: Slave with 32-bit, 16-bit, and 8-bit data transfer operation.

Interrupts (INTA#): Interrupts requested on Interrupt A.

Plug-and-Play: The system maps the base address into the PCI bus 32-bit memory space.

Environmental
Operating temperature: 0 to 70°C (AcPC464) or -40 to 85°C (AcPC464E)

Storage temperature: -55 to 125°C.

Relative humidity: 5 to 95% non-condensing.

MTBF: Consult factory.

Power: 160mA at +5V, typical.

Ordering Information

CompactPCI Boards
AcPC464: Digital I/O and counter/timer module

AcPC464E: Same as AcPC464 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

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