**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 false safe

### 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 (5.6µS, 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): -52 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 INA, INB, and INC port. These TTL I/O 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 1.6µS pulse upon counter function completion. Programmable as active high or low.

### Ordering Information

**CompactPCI Boards**
- AcPC464: Digital I/O and counter/timer module
- AcPC464E: Same as AcPC464 plus extended temp range

**Software**
- QNX® software support package
- Windows® DLL software support
- VxWorks® software support package

**Accessories**
- Same as AcPC464 plus extended temp range

**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

**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

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