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. A conduction-cooled version is also available.

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

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.
- 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 INA, INB, and INC 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 indicator, 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 / R) or -40 to 85°C (PMC464E / CC)
- Storage temperature: -55 to 105°C.
- Relative humidity: 5 to 95% non-condensing.
- Power: 160mA at +5V, typical.

Continued on the next page.
PMC Modules

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
PMC464CC: Digital I/O and counter/timer module, extended temperature range and conduction cooled with rear I/O connector

Software (see software documentation for details)
PMCSW-API-VXW: VxWorks® software support package
PCISW-API-WIN: Windows® DLL software support
PCISW-API-LNX: 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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