Compact PCI

Unmatched balance of performance, features & price for the best value
Acromag: The I/O Leader
Acromag is focused on developing embedded computing solutions that provide the best long term value in the industry. Compare and you will find that Acromag offers an unmatched balance of price, performance, and features.

60+ Years of I/O Experience
With over 60 years of industrial I/O design experience, Acromag stands alone in the high-performance bus-board market. Developing VMEbus I/O boards since 1984, we combine our process control expertise with extensive experience in embedded computing. This background gives us unrivaled insight to many unique concerns when interfacing computer systems to various sensors and controllers in a wide range of applications.

Acromag processor, FPGA, and I/O products are commonly used in these industries:
- military/defense
- transportation
- semiconductors
- communication
- aerospace
- manufacturing
- scientific
- research labs

Quality You Can Count On
We take every measure to guarantee dependable operation with ISO9001 and AS9100 certified quality management. State-of-the-art manufacturing with industrial-grade components adds extra ruggedness. Advanced inspection and testing further ensure that Acromag I/O performs at or beyond their rated specs.

Technical Support
Drawing on a wealth of embedded I/O experience, our sales engineers are well qualified to support you in the use of our products in your end-applications. We take pride in our highly experienced staff that excels at after-sale technical support.

Global Representation
Great care has been put into building a team of highly skilled representatives and distributors. They are located around the world to service your needs.

Online Ordering
Find full documentation and pricing information online. You can get quotes and even order directly on our website.

Experience counts – especially when engineering the right embedded solution. And with more than 60 years experience, Acromag can help you reduce your costs and increase your productivity.

Depend on Acromag
AcPC330
16-bit A/D Analog Input

AcPC330 boards provide fast, high resolution A/D conversion.

The AcPC330 has many features to improve your overall system throughput rate. You can scan all channels or define a subset for more frequent sampling. Burst mode scans selected channels at the maximum conversion rate. Uniform mode performs conversions at user-defined intervals. Both modes can scan continuously, or execute a single cycle upon receiving a trigger.

“Mailbox” memory allows the CPU to read the latest data in 32 storage buffer registers without interrupting the A/D converter.

Features
- 16-bit A/D converter (ADC)
- 8µS conversion time (125KHz)
- 16 differential or 32 single-ended inputs (±5V, ±10V, 0-5V, and 0-10V input ranges)
- Individual channel mailbox with one or two storage buffer registers per channel
- Programmable scan control
- Four scanning modes
- User-programmable interval timer
- External trigger input and output
- Programmable gain for individual channels
- Post-conversion interrupts

Benefits
- “Mailbox” memory eliminates scanning interruptions for optimum throughput.
- Data register indicates new and missed (overwritten) data values in the mail box.
- Programmable interrupts simplify data acquisition by providing greater control.

Specifications

**Analog Input**
- Input configuration: 16 differential or 32 single-ended channels.
- A/D resolution: 16 bits.
- Input ranges: ±5V, ±10V, 0-5V, and 0-10V.
- Programmable gains: 1x, 2x, 4x, 8x.
- Maximum throughput rate:
  - Only one channel can be updated at a time.
  - One channel: 125KHz (8µS/conversion)
  - [66KHz (15µS/conversion) recommended]
  - 16 channels (differential): 4.2KHz (240µS/16 ch)
  - 32 channels (single-ended): 2.1KHz (480µS/32 ch).
- Data sample memory: Individual channel mailbox with one or two storage buffer registers per channel
- A/D triggers: External and software.
- Internal timer: One user programmable timer for analog input acquisition control.
- System accuracy: ±0.15 LSB (0.005%) typical
- (SW calib., gain=1, 25°C).
- Data format: Straight binary or two’s compliment.
- Input overvoltage protection: 
  - Vss -20V to Vdd 40V with power on,
  - Vss -35V to 55V power off.
- Common mode rejection ratio (60Hz): 96dB typical.
- Channel-to-channel rejection ratio (60Hz): 96dB typical.

**Environmental**
- Operating temperature: 0 to 70°C
  (E version -40 to 85°C).
- Storage temperature: -55 to 100°C.
- Relative humidity: 5 to 95% non-condensing.
- MTBF: Consult factory.
- Power: 290mA at +5V (350mA maximum).

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#): Interrupt A is used to request an interrupt.
- Plug-and-Play: The system maps the base address into the PCI bus 32-bit memory space.

Ordering Information

**I/O Boards**

- AcPC330
  Analog input board
- AcPC330E
  Same as AcPC330 plus extended temperature range

**Software**

- PCMSW-API-VXW
  VxWorks® software support package
- PCISW-API-WIN32
  32-bit Windows® DLL Driver software package
- PCISW-API-WIN64
  64-bit Windows® DLL Driver software package
- PCISW-API-LNX
  Linux™ support (website download only)

**Accessories**

- 5028-378
  Termination panel, SCSI-2 connector, 50 screw terminals
- 5028-438
  Cable, shielded, SCSI-2 connector at both ends

Visit web page for more information

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AcPC341 boards provide fast, high resolution, simultaneous A/D conversion of eight channels.

These boards have sixteen analog inputs which are sampled as two eight-channel banks. Eight A/D converters (ADCs) permit simultaneous conversion of all eight channels in a bank. All 16 channels share two generous 512-sample memory buffers. Conversion of each bank requires only 8µs, and all 16 channels can be sampled in just 16µs.

Flexible configuration options give you extensive control over the conversion process. The channels or bank to be converted, timing, scan mode, and other parameters are user-programmable. Interrupt support adds further control to interrupt upon a programmable threshold when the data in memory exceeds the set threshold.

Features
- 16 differential inputs (±10V DC input range)
- Eight 14-bit A/D converters with simultaneous multi-channel conversion
- 8µs conversion time (125KHz) for 8-channel bank
- Two 512-sample memory buffers
- Data tagging for channel identification
- Programmable conversion timer
- Programmable channel conversion control
- External trigger input and output
- Continuous and single-cycle conversion modes
- Interrupt generation for memory full threshold conditions
- Precision calibration voltages stored on-board

Benefits
- Simultaneous channel conversion and on-board memory enable megahertz throughput rates.

Specifications

**Analog Inputs**
- Input channels: 16 differential.
- A/D resolution: 14 bits.
- Input range: ±10V.
- Maximum throughput rate:
  - Eight channels can be simultaneously acquired.
  - One channel: 125KHz (8µs/conversion)
  - 8 channels (same bank): 1MHz (8µs/8 channels)
  - 16 channels (high & low banks): 1MHz (16µs/16 ch. at maximum 2.2K ohm source resistance).
- Data sample memory: Two 512-sample memory buffers allows writing to one buffer while reading from the other.
- A/D triggers: Internal timer, external, and software.
- Internal conversion timer: User-programmable delay between simultaneous conversion of 8-channel banks.
- Maximum delay is 2.09 second interval.
- System accuracy: ±2.4 LSB (0.014%).
- Data format: Binary two’s complement.
- Overvoltage protection: ±25V (power on), ±40V (off).
- Common mode rejection ratio (60Hz): 96dB typical.
- Channel-to-channel rejection ratio (60Hz): 96dB typical.

**Environmental**
- Operating temperature: 0 to 70°C (E version -40 to 85°C).
- Storage temperature: -55 to 105°C.
- Relative humidity: 5 to 95% non-condensing.
- MTBF: Consult factory.
- Power: 265mA at +5V (320mA maximum).

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#): Interrupt A is used to request an interrupt.
- Plug-and-Play: The system maps the base address into the PCI bus 32-bit memory space.

Ordering Information
- AcPC341: Analog input board
- AcPC341E: Same as AcPC341 plus extended temperature range

Software
- PMCSW-API-VXW: VxWorks® software support package
- PCISW-API-WIN32: 32-bit Windows® DLL Driver software package
- PCISW-API-WIN64: 64-bit Windows® DLL Driver software package
- PCISW-API-LNX: Linux™ support (website download only)

Accessories
- 5028-378: Termination panel, SCSI-2 connector, 50 screw terminals
- 5028-438: Cable, shielded, SCSI-2 connector at both ends

Visit web page for more information
**AcPC424 Digital I/O (Differential & TTL) and Counter/Timers**

The AcPC424 provides 24 differential input/outputs, 16 TTL input/output channels, and four 16-bit multifunction counter/timers.

The 16 TTL input/output channels can be programmed as inputs or outputs on an individual channel basis. The 24 differential input/output channels are programmed as inputs or outputs on an 4-channel port basis. All input channels can be enabled for change of state, low, or high 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**
- 40 digital input/output channels: 24 differential input/outputs, 16 TTL input/output channels
- 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 are failsafe

### Specifications

**Differential Digital I/O**
- I/O channel configuration: 24 bidirectional differential signals. Direction is controlled as a 4-channel group.
- Differential driver output voltage with 50 ohm load: 2V minimum, 5V maximum.
- Common mode output voltage: 3V maximum.
- Minimum input resistance: 12K ohms.
- Termination resistors: 120 ohm termination resistor networks are installed in sockets.

**TTL Digital I/O**
- I/O channel configuration: 16 bidirectional TTL transceivers with 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, low to high: 3.5V typical.
- Input signal threshold, high to low: 1.5V typical.

**Digital Output**
- Output voltage range: 0 to 5V DC.
- Output ON current range: -32 to 32mA.
- Output pullups: 4.7K ohm socketed resistors.

**Input Interrupts**
- 40 channels of interrupts are available for high-to-low, low-to-high, or any change-of-state event type.
- Debounce: Selectable for each channel. User-selectable (5.6µS, 50.4µS, 408.8µS, or 3.276mS).

**Counter/Timers**
- Counter/timer configuration: Four 16-bit counters can be configured into two 32-bit counters.
- Counter input: Each counter has an INX, INy, and INz port. These templates: input signals control event/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.

**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 (AcPC424) or -40 to 85°C (AcPC424E)
- Storage temperature: -55 to 125°C.
- Relative humidity: 5 to 95% non-condensing.
- MTBF: Consult factory.
- Power: 216mA at +5V, typical.

### Ordering Information

**CompactPCI Boards**
- AcPC424: Digital I/O and counter/timer module
- AcPC424E: Same as AcPC424 plus extended temp. range

**Software**
- PMCSW-API-VXW: VxWorks support pkg.
- PCISW-API-WIN32: 32-bit Windows’ DLL Driver software package
- PCISW-API-WIN64: 64-bit Windows’ DLL Driver software package
- PCISW-API-LNX: Linux support (website download only)

**Accessories**
- 5025-288: Terminalization panel, SCSI-3 connector, 68 screw terminals
- 5028-432: Cable, shielded, SCSI-3 connector both ends

Visit web page for more information.

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**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).

**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): -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<sub>A</sub>, IN<sub>B</sub>, and IN<sub>C</sub> 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.

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:
  - 100mS (debounce disabled).
  - Maximum period measurement: 200mS (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 operations.
- 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**
- PMCSW-API-VXW: VxWorks® software support package
- PCISW-API-WIN32: 32-bit Windows® DLL Driver software package
- PCISW-API-WIN64: 64-bit Windows® DLL Driver software package
- PCISW-API-LNX: Linux® support (website download only)

**Accessories**
- S025-288: Termination panel, SCSI-3 connector, 68 screw terminals
- S028-432: Cable, shielded, SCSI-3 connector both ends

Visit web page for more information
AcPC48x Counter/Timer with Quadrature

- AcPC482: Ten 16-bit counters – TTL
- AcPC483: Four 16-bit counters – TTL, and Four 32-bit counters – RS422
- AcPC484: Six 32-bit counters – RS422

Several models with a variety of configurations provide up to ten counter/timer channels for counting events, generating waveform control signals, measuring pulse-widths, periodic rates, or quadrature position and monitoring operations.

Support for internal or external triggering simplifies the synchronization of operations to specific events. Counter functions can use internally generated clocks or an externally supplied clock.

Features
- Ten 16-bit counter/timers (AcPC482 only) or six 32-bit counter/timers (AcPC484 only)
- Two 16-bit counters can be combined to create one 32-bit counter
- Available with both TTL and RS422 driver interface (AcPC483 only)
- 16 bi-directional digital I/O
- 20MHz clock time base
- Counter/timer functions:
  - Quadrature position measurement
  - Pulse width modulation
  - Watchdog timer
  - Event counting
  - Frequency measurement
  - Period/pulse-width measurement
  - One-shot/repetitive
- Extended temperature option (-40 to 85°C)

Benefits
- Most configuration is handled by a single register which minimizes programming.
- Pullups are socketed for easy adjustment.

 Specifications

**Counter/Timers**

Counter/timer configuration:
- AcPC482: Ten 16-bit counters – TTL
- AcPC483: Four 16-bit counters – TTL
- AcPC484: Six 32-bit counters – RS422

Other I/O mixes can be made available as specials.

- Clock frequency: 20MHz
- Field I/O: Front panel SCSI-3 connector.
- Speed (with 20MHz internal clock):
  - Maximum output pulse/square wave freq.: 200nS
  - Minimum event pulse width: 100nS
  - Minimum pulse width measurement: 100nS
  - Minimum period measurement: 200nS

- Mode accuracy (with external clocking):
  - Waveform generation: Period is ±15nS
  - Watchdog: Timeout occurs within ±1 clock cycle
  - Pulse/period measurement: ±1 clock cycle
  - Internal clocks: Programmable 1.25, 2.5, 5, 10 or 20MHz via the counter control register.
  - External clocks: Supported on a per-counter basis via clock line. Maximum frequency 8MHz

- Interrupts: Supported for watchdog timer time-out, event count complete, pulse width or periodic rate measurement complete, pulse wave complete (one-shot mode), successive waveform generation (continuous).
- Trigerring/gate: Programmable via register write or external trigger. Minimum pulse width 100nS. Line may be used for gating of counter.
- Counter trigger: Interface for triggering counter functions. Input level is TTL or RS422 differential digital.
- Counter input: Interface for events and pulse/period measurements. Also triggers load of watchdog timer register. Level is TTL or RS422 differential digital.
- TTL compatibility: $V_{IH} = 2.0V$ and $V_{IL} = 0.8V$. Inputs are buffered and include 4.7K ohm pull-ups to +5V.
- Counter output: Level is TTL or RS422 differential digital.

**Digital I/O**

I/O channel configuration:
- 16 bi-directional TTL transceivers
- Direction controlled as 16 independent channels.

These modules are very flexible and available in several varieties to accommodate a broad range of counter/timer applications.

**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#): Interrupt A is used to request an interrupt.
- Plug-and-Play: The system maps the base address into the PCI bus 32-bit memory space.

**Environmental**

- Operating temperature: 0 to 70°C or -40 to 85°C (E versions)
- Storage temperature: -55 to 125°C.
- Relative humidity: 5 to 95% non-condensing.
- Power: 320mA at +5V, typical.

**Ordering Information**

- AcPC482: Ten 16-bit counters – TTL
- AcPC482E: AcPC482 with extended temperature range
- AcPC483: Four 16-bit counters – TTL
- AcPC483E: AcPC483 with extended temperature range
- AcPC484: Six 32-bit counters – RS422
- AcPC484E: AcPC484 with extended temperature range

**Software**

- PMCSW-API-VXW: VxWorks® software support package
- PCISW-API-WIN32: 32-bit Windows® DLL Driver software package
- PCISW-API-WIN64: 64-bit Windows® DLL Driver software package
- PCISW-API-LNX: Linux® support (website download only)

**Accessories**

- S025-288: Termination panel, SCSI-3 connector, 68 screw terminals
- S028-432: Cable, shielded, SCSI-3 connector both ends

Visit web page for more information.
AcPC730 Multi-function I/O

- Analog Input
- Analog Output
- Digital I/O
- Counter/Timer

AcPC730 I/O boards provide a variety of I/O functions on a single card. These new high-density boards perform both high-speed and high-resolution A/D and D/A conversion and also handle digital I/O plus counter/timer functions.

Now you can conserve your precious card slots and still get all the I/O functionality you need. The AcPC730 is designed for extreme versatility with many deluxe features to meet most applications. However, the AcPC730 is still very budget-friendly.

### Features

**Analog Inputs**
- 16 differential or 32 single-ended inputs (+3.3V, ±5V, ±10V, 0-5V, and 0-10V ranges)
- 16-bit ADC with 512 sample RAM
- 10µS conversion time (100kHz)
- Interrupt upon ADC memory threshold condition (user-programmable data sample threshold)
- User-programmable interval timer

**Analog Outputs**
- Eight analog output channels (±10V range)
- Individual 16-bit DACs per channel
- 1024 sample FIFO for waveform generation
- 12.375µS settling time (80.8kHz throughput)
- Interrupt on user-programmable FIFO threshold

**Digital I/O**
- 16 TTL bidirectional input/outputs

**Counter/Timer**
- One 32-bit counter/timer

The AcPC730 combines analog I/O, digital I/O, and counter/timer functions on a single high-density module to save PCIe slots.

### Specifications

#### Analog Input
- Input configuration: 16 differential or 32 single-ended channels multiplexed to a single A/D converter.
- A/D resolution: 16 bits.
- Input ranges: ±3.3V, ±5V, ±10V, 0-5V, and 0-10V.
- Maximum throughput rate:
  - One channel updated at a time: 10µS
  - 1 channel (maximum): 160µS
  - 32 channels (maximum): 320µS
- Data sample memory: 512 samples shared by all channels.
- A/D trigger: Internal timer, external source, software.
- System accuracy: ±3 LSB typ. (SW calib., gain=1, 25°C).
- Data format: Straight binary or binary two's compliment.
- Input overvoltage protection: -40 to 55V power off.
- Common mode rejection ratio (60Hz): 96dB typical.
- Channel-to-channel rejection ratio (60Hz): 96dB typical.

#### Analog Output
- Output configuration: 8 single-ended channels, each controlled by its own independent D/A converter.
- D/A resolution: 16 bits.
- Output range: ±10V.
- Maximum throughput rate:
  - Outputs updated simultaneously or individually:
    - 1 channel: 12.375µS
    - 8 different channels: 12.375µS
- DAC programming: Via independent channel registers or through shared FIFO.
- Data sample memory: 1024 sample FIFO shared by all channels.
- D/A trigger: Internal timer, external source, software.
- System accuracy: 0.0076% of 20V span max. error corrected (i.e. calibrated) at 25°C with output unloaded.
- Data format: Straight binary.
- Output at reset: 0V.

#### Digital I/O
- I/O channel configuration: 16 TTL transceivers, input/ output direction selectable on an 8-channel basis.

#### Digital Input
- Input voltage range: 0 to 5V DC.
- Input signal threshold:
  - Low to high: 2.0V typical.
  - High to low: 0.8V typical.
- Input response time: 250 nanoseconds.
- Interrupts: 16 channels of interrupts for high-to-low, low-to-high, or any change-of-state event types.
- Debounce: Individual debounce selectable on each channel. User-selectable (4µS, 64µS, 1mS, or 8mS).

#### Digital Output
- Output voltage range: 0 to 5V DC.
- Output ON current range: -15 to 64mA.
- Output pullups: 4.7 ohm socketed resistors.

#### Counter/Timers
- Counter/timer configuration: one 32-bit counter (requires use of channels 2 through 5 of digital I/O section).
- Functions:
  - Watchdog timer, event counting, pulse measurement, period measurement, output waveform generation (pulse width modulation, continuous pulse, single pulse, continuous waveform).
  - Internal clock: Programmable 1, 4, 8MHz.
  - External clock: 3.4MHz.
- Input voltage range: 0 to 5V DC.
- Output voltage range: 0 to 5V with 4.7 ohm pull-up.
  - Maximum of 0 to 35V with external supply.

Continued on the next page.
Specifications (continued)

**CompactPCI bus Compliance**

Meets PCI spec. V2.1 and PICMG 2.0, R3.0.
Data transfer bus: Slave with 32-bit, 16-bit, and 8-bit data transfer operation. 32-bit read/write accesses are implemented as two 16-bit transfers.
Interrupts (INTA#): Interrupt A is used to request an interrupt.
Plug-and-Play: The system maps the base address into the PCI bus 32-bit memory space.

**Environmental**

Operating temperature: 0 to 70°C
(E version -40 to 85°C)
Storage temperature: -40 to 85°C
Relative humidity: 5 to 95% non-condensing.
Power: 245mA at +5V (290mA maximum).
MTBF: Consult factory.

Ordering Information

**I/O Boards**

- AcPC730
  - Multi-function I/O board
- AcPC730E
  - Same as AcPC730 plus extended temperature range

**Software**

- PMCSW-API-VXW
  - VxWorks® software support package
- PCISW-API-WIN32
  - 32-bit Windows® DLL Driver software package
- PCISW-API-WIN64
  - 64-bit Windows® DLL Driver software package
- PCISW-API-LNX
  - Linux® support (website download only)

**Accessories**

- 5025-288
  - Termination panel, SCSI-3 connector, 68 screw terminals
- 5028-432
  - Cable, shielded, SCSI-3 connector at both ends

Visit web page for more information

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AcPC8625A CompactPCI Carrier Cards for Industry Pack Modules

Description
The AcPC8625A is a non-intelligent slave board that interfaces four IP modules to the CompactPCI (cPCI) bus. All 200 I/O points are brought out the rear J4 and J5 connectors. This convenience eliminates messy cables from hanging out the front of the cage. In addition to a more efficient cage wiring design, it is also much easier to insert and replace boards. And with Acromag’s 80mm transition module (TRANS-C200), all 200 I/O points are easily ported out the back of the cage.

Key Features & Benefits
- Four industry-standard IP module slots
- Board resides in memory space
- Supports 8 and 32MHz operation
- Supports IP module I/O, ID, INT, and MEM spaces
- 200 I/O points with rear access
- High-density rear connectors
- Compatible with all CompactPCI CPUs
- Plug-and-play carrier configuration and interrupt support
- Two interrupts per IP module
- Front panel LEDs
- Supervisory circuit for reset generation
- Individually filtered and fused power to each IP
- Ruggedized with ESD strip and EMC front panel
- Easily integrate IPs with your software using RTOS VxWorks, Linux, or Win DLL for Windows® 2000/XP/Vista/7 32-bit systems.
- Clean system cabling.
- Easy board replacement.
- Simplified debugging with status LEDs.
Industry Pack Carrier Cards

AcPC8625A CompactPCI Carrier Cards for Industry Pack Modules

Performance Specifications

- **General**
  Acromag’s carrier boards provide full data access to the IP module’s I/O, ID, interrupt spaces, and memory. With full access to the programmable registers, you can easily configure and control the operation of the IP modules from the CompactPCI bus.

- **Up to two interrupt requests are supported for each IP module. All board interrupts are mapped to PCI bus INTA# signal.**

- **Individual passive filters on each IP power supply line provide optimum filtering and noise isolation between the IP modules and the carrier board.**

- **IP Compliance (ANSI/VITA 4)**
  Meets IP specs per ANSI/VITA 4-1995 (8MHz and 32MHz) and IP I/O mapping to PICMG 2.4 R1.0.

- **Electrical/mechanical interface**
  Supports single or double size IP modules. 32-bit IP modules are not supported.

- **IP Module I/O space, ID space, INT space, and MEM space supported.**

- **Interrupts**
  Supports two interrupt requests per IP module and interrupt acknowledge cycles via access to IP INT space.

- **CompactPCI bus Compliance**
  Meets PCI spec. V2.1 and PICMG 2.0, R2.1.

- **Data transfer bus**
  Slave with 32-bit, 16-bit, and 8-bit data transfer operation. 32-bit read/write accesses are implemented as two 16-bit transfers to the IPs.

- **Interrupts**
  CompactPCI bus INTA# interrupt signal. Up to two requests sourced from each IP mapped to INTA#.

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

- **Power Requirements**
  - **Power**
    +3.3V (±5%): 300mA maximum.
    +5V (±5%): 30mA maximum.
    ±12V (±5%): 0mA (not used). Plus IP module load.
  - **MTBF**
    Contact factory

- **Environmental**
  - **Operating temperature**
    -25 to 85°C (AcPC8625)
    or -40 to 85°C (AcPC8625E models).
  - **Storage temperature**
    -25 to 85°C (AcPC8625)
    or -40 to 85°C (AcPC8625E models).
  - **Relative humidity**
    5 to 95% non-condensing.

Ordering Information

- **Carrier Cards**
  AcPC8625A
  CompactPCI carrier. Holds four IP modules.
  AcPC8625AE
  Same as AcPC8625A plus extended temp. range.

- **Accessories**
  5028-438
  Cable, SCSI-2 to SCSI-2, shielded.
  5028-378
  Termination panel, SCSI-2 connector, 50 screw terminals.
  TRANS-C200
  Transition module
  See www.acromag.com for more information.

- **Software Development Tools**
  IPSW-API-VXW
  VxWorks® software support package
  IPSW-API-WIN32
  32-bit Windows® DDL driver and demo software
  IPSW-API-WIN64
  64-bit Windows® DDL driver and demo software
  IPSW-API-LINUX
  Linux™ support (website download only)
  See www.acromag.com for more information.
**AcPC8630A** CompactPCI Carrier Cards for Industry Pack Modules

**Description**
The AcPC8630A is a non-intelligent slave board that interfaces two IP modules to the CompactPCI® (cPCI) bus. All 100 I/O points are brought out the front connectors for easy cable access.

**Key Features & Benefits**
- Two industry-standard IP module slots
- Board resides in memory space
- Supports 8 and 32MHz operation
- Supports IP module I/O, ID, INT, and MEM spaces
- 100 I/O points with front access
- High-density front connectors
- Compatible with all CompactPCI CPUs
- Compatible with 32-bit and 64-bit CompactPCI® and PXI™ backplane
- Plug-and-play carrier configuration and interrupt support
- Two interrupt channels per IP module
- Front panel LEDs
- Supervisory circuit for reset generation
- Individually filtered and fused power to each IP
- Ruggedized with ESD strip and EMC front panel
- Easily integrate IPs with your software using RTOS VxWorks, Linux, or Win DLL for Windows® 2000/XP/Vista/7 32-bit systems.

- Easy access to I/O cables.
- Quick development of custom I/O boards.
- Flexibility to mix and match I/O functions as requirements change.
Industry Pack Carrier Cards

**AcPC8630A** CompactPCI Carrier Cards for Industry Pack Modules

### Performance Specifications

**General**

Acromag’s carrier boards provide full data access to the IP module's I/O, ID, interrupt and memory spaces. With full access to the IP module's programmable registers, you can easily configure and control their operation from the CompactPCI bus.

Up to two interrupt requests are supported for each IP module. All board interrupts are mapped to PCI bus INTA# signal.

Individual passive filters on each IP power supply line provide optimum filtering and noise isolation between the IP modules and the carrier board.

**IP Compliance (ANSI/VITA 4)**

Meets IP specs per ANSI/VITA 4-1995 (8MHz and 32 MHz operation) and IP I/O mapping to the front panel.

**Electrical/mechanical interface**

Supports single or double size IP modules. IP Module I/O space, ID space, INT, and MEM space supported.

**Interrupts**

Supports two interrupt requests per IP module and interrupt acknowledge cycles via access to IP INT space.

**CompactPCI bus Compliance**

Meets PCI specification V2.1 and PICMG 2.0, R2.1.

**Data transfer bus**

Slave with 32-bit, 16-bit, and 8-bit data transfer operation. 32-bit read/write accesses are implemented as two 16-bit transfers to the IPs.

**Interrupts**

CompactPCI bus INTA# interrupt signal. Up to two requests sourced from each IP mapped to INTA#. Interrupts come from IP modules via access to IP module INT space.

**32-bit memory space**

Upon power-up the system auto-configuration process (plug & play) maps the carrier’s base address (for a 1K byte block of memory) into the PCI bus 32-bit memory space.

### Power Requirements

**Power**

+3.3V (±5%): 300mA maximum.
+5V (±5%): 30mA maximum.
±12V (±5%): 0mA (not used).
Plus IP module load.

**MTBF**
Contact factory

### Environmental

**Operating temperature**

0 to 70°C (AcPC8630A model) or -40 to 85°C (AcPC8630AE model).

**Storage temperature**

-55 to 100°C.

**Relative humidity**

5 to 95% non-condensing.

### Ordering Information

**Carrier Cards**

*AcPC8630A*
CompactPCI carrier. Holds two IP modules.

*AcPC8630AE*
Same as AcPC8630A with extended temperature range.

**Accessories**

*5028-372*
Cable, SCSI-2 to CHAMP connection

*5028-378*
Termination panel, SCSI-2 connector, 50 screw terminals

See www.acromag.com for more information.

**Software Development Tools**

*IPSW-API-VXW*
VxWorks® software support package

*IPSW-API-WIN32*
32-bit Windows® DDL driver and demo software

*IPSW-API-WIN64*
64-bit Windows® DDL driver and demo software

*IPSW-API-LINUX*
Linux™ support (website download only)

See www.acromag.com for more information.
Industry Pack Carrier Cards

AcPC8635A CompactPCI Carrier Cards for Industry Pack Modules

Two Industry Pack mezzanine module slots ◆ Non-Intelligent carrier card ◆ CompactPCI bus interface

Description
The AcPC8635A is a nonintelligent slave board that interfaces two IP modules to the CompactPCI® (cPCI) bus. All 100 I/O points are brought out the rear J2 connector. This convenience eliminates messy cables from hanging out the front of the cage. In addition to a more efficient cage wiring design, it is also much easier to insert and replace boards.

Key Features & Benefits
- Two industry-standard IP module slots
- Board resides in memory space
- Supports IP module I/O, ID, INT, and MEM spaces
- Supports 8 and 32 MHz operation
- 100 I/O points with rear access
- High-density rear connectors
- Compatible with 32-bit CompactPCI® backplane
- Plug-and-play carrier configuration and interrupt support
- Two interrupt channels per IP module
- Front panel LEDs
- Supervisory circuit for reset generation
- Individually filtered and fused power to each IP
- Ruggedized with ESD strip and EMC front panel
- Easily integrate IPs with your software using RTOS VxWorks, Linux, or Win DLL for Windows® 2000/XP/Vista/7 32-bit systems.
- Clean system cabling.
- Easy board replacement as I/O needs change.
- Simplified debugging with status LEDs.
- Quick development of custom I/O boards.
- Flexibility to mix and match I/O functions as requirements change.

Acromag
THE LEADER IN INDUSTRIAL I/O

Tel 248-295-0310 Fax 248-624-9234 solutions@acromag.com www.acromag.com 30765 Wixom Rd, Wixom, MI 48393 USA

Bulletin #8400-312c
Industry Pack Carrier Cards

**AcPC8635A** CompactPCI Carrier Cards for Industry Pack Modules

### Performance Specifications

#### General
Acromag’s carrier boards provide full data access to the IP module’s I/O, ID, and interrupt spaces. With full access to the programmable registers, you can easily configure and control the operation of the IP modules from the cPCI bus.

Up to two interrupt requests are supported for each IP module. All board interrupts are mapped to PCI bus INTA# signal.

Individual passive filters on each IP power supply line provide optimum filtering and noise isolation between the IP modules and the carrier board.

#### IP Compliance (ANSI/VITA 4)
Meets IP specs per ANSI/VITA 4-1995 (8MHz operation only) and IP I/O mapping to J2 per PICMG 2.4 R1.0.

#### Electrical/mechanical interface
Supports single or double size IP modules.

#### Intermets
Supports two interrupt requests per IP module and interrupt acknowledge cycles via access to IP INT space.

#### CompactPCI bus Compliance
Meets PCI spec. V2.1 and PICMG 2.0, R2.1.

#### Data transfer bus
Slave with 32-bit, 16-bit, and 8-bit data transfer operation. 32-bit read/write accesses are implemented as two 16-bit transfers to the IPs.

#### Interrupts
CompactPCI bus INTA# interrupt signal. Up to two requests sourced from each IP mapped to INTA#.

#### 32-bit memory space
Upon power-up, the system auto-configuration process (plug & play) maps the carrier’s base address (for a 1K byte block of memory) into the PCI bus 32-bit memory space.

### Power Requirements

#### Power
+3.3V (±5%): 300mA maximum.
+5V (±5%): 30mA maximum.
±12V (±5%): 0mA (not used).
Plus IP module load.

MTBF
Contact factory

### Ordering Information

#### Carrier Cards
AcPC8635A
CompactPCI carrier. Holds two IP modules.

AcPC8635AE
Same as AcPC8635A with extended temperature range.

#### Accessories
5025-550
Cable, unshielded, 50-pin header both ends

5025-551
Same as 5025-550 except shielded

5025-552
Termination panel, 50-pin connector, 50 screw terminals

TRANS-C100
Transition module

See www.acromag.com for more information.

#### Software Development Tools
IPSW-API-VXW
VxWorks® software support package

IPSW-API-WIN32
32-bit Windows® DDL driver and demo software

IPSW-API-WIN64
64-bit Windows® DDL driver and demo software

IPSW-API-LINUX
Linux™ support (website download only)

See www.acromag.com for more information.

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ISO9001
AS9100

MADE IN USA

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AcPC4610CC
CompactPCI
Non-intelligent
PMC Carrier Card
(conduction-cooled)

Description
This board provides an easy and low cost solution that enables use of a PMC mezzanine I/O module in a standard 3U CompactPCI computer system. The carrier card acts simply as an adapter to route PCI bus signals to and from the PMC module through the CompactPCI card slot edge connector. All Acromag PMC modules and those from other vendors are supported.

This board uses a PLX Technology PCI6540 transparent PCI/PCI bridge for data transactions from the PCI bus (system host) to the PMC site. The bridge device provides a 32-bit 33/66 MHz PCI interface.

A heat frame enables conduction cooling in applications where ambient or forced air can’t provide adequate cooling. This unit is ideal for airborne systems, deployment in battleground equipment, and other situations with advanced thermal management requirements.

Field I/O signals are routed through the carrier card’s rear J2 connector.

An air-cooled rear transition board, Acromag Model TRANS-C4610, is available to map the field I/O on the PMC module to the rear of the CompactPCI system.

Features
- 3U CompactPCI card
- Holds one PMC card
- 32-bit 33/66 MHz PCI Interface
- Transparent PCI/PCI bridge for data transactions from the PCI bus to PMC module
- Rear connection I/O access
- Supports both 5V and 3.3V signalling
- Conduction-cooled -40 to 85°C

Specifications

Environmental
- Operating temperature: -40 to 85°C (conduction-cooled.)
- Storage temperature: -55 to 100°C
- Relative humidity: 5-95% non-condensing
- American National Standard for 2mm Connector Equipment
- American National Standard for Conduction Cooled PMC:
- Power (received from the CompactPCI 3U Back Plane):
  - 3.3V DC (±5%)*: 135mA typical, 150mA max.
  - 5.0V DC (±5%)*: 50mA typical, 70mA max.
  - ±12V DC (±5%)**: Per PMC module.
  - * With no PMC module installed, ±12V DC not used.
  - ** Max. power 7.5W (total all supplies) per PMC standard.

Power (received from the CompactPCI 3U Back Plane):
- MTBF: Call factory

Physical: CompactPCI Carrier Card
- Physical configuration: 3U CompactPCI Card
- Dimensions: 100 x 160mm.

Physical: Transition Module
- Rear CompactPCI connectors: 2mm J1 & J2 connectors.
- PMC connectors: Three 1mm connectors.
- The conduction-cooled model (AcPC4610CC) uses a conduction-cooled frame with wedge-loks® and thermo bars.

Physical: Transition Module
- Physical configuration: Half-length 3U CompactPCI Card
- Dimensions: 100 x 80mm.

PM and CompactPCI bus Compliance
- Meets PCI specification version 2.3, CompactPCI specification PICMG 2.3 R1.0, and PMC specification P1386.1.
- Meets PCI specification version 2.3, CompactPCI specification PICMG 2.3 R1.0, and PMC specification P1386.1.
- Data transfer bus: Slave with 32-bit, 16-bit, and 8-bit data transfer operation.
- Interrupts: CompactPCI bus INTA# interrupt signal.
- PCI Interface: PLX Technology PCI6540 transparent PCI/PCI bridge for data transactions from the PCI bus (system host) to the PMC site. The bridge device provides a 32-bit 33/66 MHz PCI interface.

Ordering Information

Carrier Cards
- AcPC4610CC
  - CompactPCI bus carrier card for one PMC module, conduction-cooled

Accessories
- TRANS-C4610: Transition module, air-cooled
- 5028-432: Shielded cable, SCSI-3 68-pin connector, 2m long.
- 5025-288: Termination panel, DIN rail-mount, 68 screw terminals, SCSI-3 connector.

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AcPC4610E
CompactPCI
Non-intelligent
PMC Carrier Card
(air-cooled)

Description
This board provides an easy and low cost solution that enables use of a PMC mezzanine I/O module in a standard 3U CompactPCI computer system. The carrier card acts simply as an adapter to route PCI bus signals to and from the PMC module through the CompactPCI card slot edge connector. All Acromag PMC modules and those from other vendors are supported.

This board uses a PLX Technology PCI6540 transparent PCI/PCI bridge for data transactions from the PCI bus (system host) to the PMC site. The bridge device provides a 32-bit 33/66 MHz PCI interface.

Front and rear-panel access to field I/O signals are accommodated. The carrier card’s front panel cut-out provides access to a PMC module’s front I/O connector. Alternatively, all I/O signals can be routed through the carrier card’s rear J2 connector.

An air-cooled rear transition board, Acromag Model TRANS-C4610, maps the field I/O on the PMC module to the rear of the CompactPCI system.

Features
- 3U CompactPCI card
- Holds one PMC card
- 32-bit 33/66 MHz PCI Interface
- Transparent PCI/PCI bridge for data transactions from the PCI bus to PMC module
- Rear connection I/O access
- Supports both 5V and 3.3V signalling
- -40 to 85°C

Specifications
Environmental
Operating temperature: -40 to 85°C.
Storage temperature: -55 to 100°C.
Relative humidity: 5-95% non-condensing

Power (received from the CompactPCI 3U Back Plane):
3.3V DC (±5%)*: 135mA typical, 150mA max.
5.0V DC (±5%)*: 50mA typical, 70mA max.
±12V DC (±5%)**: Per PMC module.
* With no PMC module installed, ±12V DC not used.
** Max. power 7.5W (total all supplies) per PMC standard.

MTBF: Call factory

Physical: CompactPCI Carrier Card
Physical configuration: 3U CompactPCI Card 100 x 160mm.
Rear CompactPCI connectors: 2mm J1 & J2 connectors.
PMC connectors: Three 1mm connectors.
The air-cooled model (AcPC4610E) uses the standard front panel assembly with a PMC bezel cutout.

Physical: Transition Module
Physical configuration: Half-length 3U CompactPCI Card 100 x 80mm.
Connectors: 2mm RJ2 connector which maps the rear I/O signals to a SCSI-3 connector. This model also uses a standard rear front panel assembly with a SCSI-3 connector cutout.

PMC and CompactPCI bus Compliance
Meets PCI specification version 2.3, CompactPCI specification PICMG 2.3 R1.0, and PCI specification P1386.1.
Data transfer bus: Slave with 32-bit, 16-bit, and 8-bit data transfer operation.
Interrupts: CompactPCI bus INTA# interrupt signal.
PCI Interface: PLX Technology PCI6540 transparent PCI/PCI bridge for data transactions from the PCI bus (system host) to the PMC site. The bridge device provides a 32-bit 33/66 MHz PCI interface.

Ordering Information
Carrier Cards
AcPC4610E
CompactPCI bus carrier card for one PMC module, air-cooled

Accessories (see accessories documentation for details)
TRANS-C4610: Transition module, air-cooled
5028-432: Shielded cable, SCSI-3 68-pin connector, 2m long.
5025-288: Termination panel, DIN rail-mount, 68 screw terminals, SCSI-3 connector.
AcPC4620CC
CompactPCI
Non-intelligent
PMC Carrier Card
(conduction-cooled)

Description
This board provides an easy and low cost solution that enables use of a PMC mezzanine I/O module in a standard 6U CompactPCI computer system. The carrier card acts simply as an adapter to route PCI bus signals to and from the PMC module through the CompactPCI card slot edge connector. All Acromag PMC modules and those from other vendors are supported.

This board uses a PLX Technology PCI6540 transparent PCI/PCI bridge for data transactions from the PCI bus (system host) to two PMC sites. The bridge device provides a 32 or 64-bit PCI interface with 33 or 66 MHz bus frequencies.

A heat frame enables conduction cooling in applications where ambient or forced air can’t provide adequate cooling. This unit is ideal for airborne systems, deployment in battleground equipment, and other situations with advanced thermal management requirements.

Field I/O signals are routed through the carrier card’s rear J3 and J5 connectors.

An air-cooled rear transition board, Acromag Model TRANS-C4620, maps the field I/O on the PMC module to the rear of the CompactPCI system.

Features
- 6U CompactPCI card
- Holds two PMC cards
- 32 or 64-bit PCI Interface at 33 or 66 MHz
- Transparent PCI/PCI bridge for data transactions from the PCI bus to PMC module
- Rear connection I/O access
- Supports both 5V and 3.3V signalling
- Conduction-cooled -40 to 85°C

Specifications
Environmental
Operating temperature: -40 to 85°C (conduction-cooled.)
Storage temperature: -55 to 100°C.
Relative humidity: 5-95% non-condensing
American National Standard for 2mm Connector Equipment Practice on Conduction Cooled Euroboards:
American National Standard for Conduction Cooled PMC:
Power (received from the CompactPCI 3U Back Plane):
3.3V DC (±5%)*: 135mA typical, 150mA max.
5.0V DC (±5%)*: 50mA typical, 70mA max.
±12V DC (±5%)*: Per PMC module.
* With no PMC module installed, ±12V DC not used.
** Max. power 7.5W (total all supplies) per PMC standard.
MTBF: Call factory

Physical: CompactPCI Carrier Cards
Physical configuration: 6U CompactPCI Card 233.35 x 160mm.
Rear CompactPCI connectors: 2mm J1, J2, J3, J5 connectors.
PMC connectors: Eight 1mm connectors.
The conduction-cooled model (AcPC4620CC) uses a conduction-cooled frame with wedge-locks® and thermo bars.

Physical: Transition Module
Physical configuration: Half-length 6U CompactPCI Card 233.35 x 80mm.
Connectors: 2mm RJ2 connector which maps the rear I/O signals to a SCSI-3 connector. This model also uses a standard rear front panel assembly with a SCSI-3 connector cutout.

PMC and CompactPCI bus Compliance
Meets PCI specification version 2.3, CompactPCI specification PICMG 2.3 R1.0, and PMC specification P1386.1.
Meets PCI specification version 2.3, CompactPCI specification PICMG 2.3 R1.0, and PMC specification P1386.1.

Ordering Information
Carrier Cards
AcPC4620CC
CompactPCI bus carrier card for two PMC modules, conduction-cooled

Accessories (see accessories documentation for details)
TRANS-C4620: Transition module
5028-432: Shielded cable, SCSI-3 68-pin connector, 2m long.
5025-288: Termination panel, DIN rail-mount, 68 screw terminals, SCSI-3 connector.

All trademarks are the property of their respective owners.
Description
This board provides an easy and low cost solution that enables use of a PMC mezzanine I/O module in a standard 6U CompactPCI computer system. The carrier card acts simply as an adapter to route PCI bus signals to and from the PMC module through the CompactPCI card slot edge connector. All Acromag PMC modules and those from other vendors are supported. This board uses a PLX Technology PCI6540 transparent PCI/PCI bridge for data transactions from the PCI bus (system host) to two PMC sites. The bridge device provides a 32 or 64-bit PCI interface with 33 or 66MHz bus frequencies.

Front and rear-panel access to field I/O signals are accommodated. The carrier card’s front panel cut-out provides access to a PMC module’s front I/O connector. Alternatively, all I/O signals can be routed through the carrier card’s rear J3 and J5 connectors.

An air-cooled rear transition board, Acromag Model TRANS-C4620, maps the field I/O on the PMC module to the rear of the CompactPCI system.

Features
- 6U CompactPCI card
- Holds two PMC cards
- 32 or 64-bit PCI Interface at 33 or 66 MHz
- Transparent PCI/PCI bridge for data transactions from the PCI bus to PMC module
- Rear connection I/O access
- Supports both 5V and 3.3V signalling
- -40 to 70°C

Specifications
Environmental
Operating temperature: -40 to 85°C.
Storage temperature: -55 to 100°C.
Relative humidity: 5-95% non-condensing
Power (received from the CompactPCI 3U Back Plane):
3.3V DC (±5%)*: 135mA typical, 150mA max.
5.0V DC (±5%): 50mA typical, 70mA max.
±12V DC (±5%): Per PMC module.
* With no PMC module installed, ±12V DC not used.
** Max. power 7.5W (total all supplies) per PMC standard.

Physical: CompactPCI Carrier Card
Physical configuration: 6U CompactPCI Card
233.35 x 160mm.
Rear CompactPCI connectors: 2mm J1, J2, J3, J5 connectors.
PMC connectors: Eight 1mm connectors.
The air-cooled model (AcPC4620E) uses the standard front panel assembly with a PMC bezel cutout.

Physical: Transition Module
Physical configuration: Half-length 6U CompactPCI Card
233.35 x 80mm.
Connectors: 2mm RJ2 connector which maps the rear I/O signals to a SCSI-3 connector. This model also uses a standard rear front panel assembly with a SCSI-3 connector cutout.

PMC and CompactPCI bus Compliance
Meets PCI specification version 2.3, CompactPCI specification PICMG 2.3 R1.0, and PMC specification P1386.1.
Meets PCI specification version 2.3, CompactPCI specification PICMG 2.3 R1.0, and PMC specification P1386.1.
Data transfer bus: Slave with 32-bit, 16-bit, and 8-bit data transfer operation.
Interrupts: CompactPCI bus INTA# interrupt signal.
PCI Interface: PLX Technology PCI6540 transparent PCI/PCI bridge for data transactions from the PCI bus (system host) to the PMC site. The bridge device provides a 32-bit 33/66 MHz PCI interface.

Ordering Information
Carrier Cards
AcPC4620E
CompactPCI bus carrier card for two PMC modules, air-cooled

Accessories (see accessories documentation for details)
TRANS-C4620: Transition module
5028-432: Shielded cable, SCSI-3 68-pin connector, 2m long.
5025-288: Termination panel, DIN rail-mount, 68 screw terminals, SCSI-3 connector.
## Linux® Libraries I/O Function Routines

This free software utility is available for download from Acromag’s website.

#### simplify interfacing between Acromag I/O boards and your software

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<td><strong>APSW-API-LNX</strong>&lt;br&gt;Linux example libraries for AcroPack® modules and carriers.</td>
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### Application Programming Interface (API)

Acromag’s software development tools greatly simplify the interface between the I/O boards and your software application program. The Linux libraries are supplied as “C” source code. These libraries provide easy-to-use function routines that quickly integrate with your application. Function routines are ready for use “as-is,” but they are also easily customized for your unique application.

### Demonstration Program

This powerful program lets you fully exercise the libraries and your hardware before running the actual application. These diagnostics will save you hours troubleshooting and debugging your applications. You can set addresses, set up registers, read real-world inputs, or drive outputs. The demonstration program steps you through the exact functions that are called in your application.
Support Software

VxWorks® Libraries  I/O Function Routines

Supports any CPU target with quick modification  ◆  API easily convertible for any operating system

Description
Application Programming Interface (API)
Acromag's software development tools greatly simplify the interface between the I/O boards and your software application program. VxWorks libraries are supplied as "C" source code. These libraries provide easy-to-use function routines that quickly integrate with your application. Function routines are ready for use "as-is," but they are also easily customized for your unique application.

This powerful program lets you fully exercise the libraries and your hardware before running the actual application. These diagnostics will save you hours troubleshooting and debugging your applications. You can set addresses, set up registers, read real-world inputs, or drive outputs. The demonstration program steps you through the exact functions that are called in your application.

Target any CPU
Acromag provides direct support for VxWorks when using PowerPC, x86 and 68000 CPU boards. The VxWorks C Library includes support for x86 PCI, MV167 and MV2700 CPU boards. Each library contains detailed information on integrating with the CPU's Board Support Package (BSP). The libraries also include instructions for implementing this software with other manufacturer's CPU board BSPs. Use with Industry Pack carriers from third-party board vendors is also supported.

The IPSW-API-VXW library package offers support for Acromag carriers. Other carriers are compatible, but require some minor modifications. Acromag uses a very innovative modular programming technique. This allows new carrier files to be created without affecting any of the complex IP module files or interrupt service routines.

User-Friendly Licensing
Acromag's VxWorks software libraries are provided with a full site license. This allows anyone at your location to use this software without any additional charges. Additionally, no run-time license is required either.

The VxWorks software libraries include support for the full family of boards or modules, not just certain models unless otherwise noted.

Key Features & Benefits
- Easy installation procedure
- Readme files with step-by-step instructions
- Quickly creates libraries
- Targeted support for Power PC, x86, and 68000 series CPUs
- Supports any CPU target with quick modification
- API easily convertible for any operating system
- Source code provided to ensure maximum flexibility in implementing your application
- Ability to verify operation of your modules and carriers with a demonstration program to ensure proper hardware operation before attaching your application

Ordering Information

APSW-API-VXW
VxWorks software support package for AcroPack modules and carriers.

IPSW-A7VME-VXW
VxWorks software support package for Acromag VME SBC Series XVME6500 and XVME6700 when used with Industry Pack modules.

IPSW-API-VXW
VxWorks software support package for Industry Pack modules and carriers.

PMCSW-API-VXW
VxWorks software support package for XMC, PMC, PCI, and CompactPCI products (supports all Acromag PMC modules and PCI or cPCI boards except IP carriers).

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Software Support

**PCISW-API-WIN** PCI Driver Software for Windows® Operating Systems

**Description**

**Application Programming Interface**

Acromag's software development tools greatly simplify the interface between the I/O boards and your Windows-based application program. This package provides DLL driver level support for Acromag's complete line of PMC, XMC, PCI and cPCI products. In addition, "C" source demonstration programs provide easy-to-use tools to test the operation of the module.

**Demonstration Programs**

Powerful programs let you fully exercise your hardware before developing the actual application. These diagnostics will save you hours troubleshooting and debugging your applications. You can set addresses, set up registers, read real-world inputs, or drive outputs. The demonstration programs step you through the exact functions that are called in your application.

**Key Features & Benefits**

- Easy installation procedure
- Documentation with step-by-step instructions
- Support for all active Acromag I/O PMC, XMC, PCI and CompactPCI boards and all Acromag FPGA PMC, XMC, PCI and CompactPCI boards except PMC CX family Virtex-II boards.
- Support for 32-bit and 64-bit systems
- Demonstration Programs
- Driver level support for desktop and embedded Windows level programming environments
- Compatible with Windows Embedded Standard applications
- Verifies operation of your I/O boards with a demonstration program to ensure proper hardware performance before attaching your application

**Ordering Information**

**Software**

For more information, see www.acromag.com. **PCISW-API-WIN**

32 or 64-bit Windows driver software package with DLLs and demonstration programs for PMC, XMC, PCI, and cPCI products. Supplied on CD-ROM.

**User-Friendly Licensing**

Acromag's PCI Windows driver software is provided with a full site license. This allows anyone at your location to use this software without any additional charges. No run-time license is required.

Each package supports all active PCI-based (PMC, XMC, PCI, CompactPCI) products. You do not need to order additional software for different models within the family. (does not support PMC CX family Virtex-II boards)

For Windows 10 / 8 / 7 / Vista ◆ Supports Acromag XMC, PMC, PCI, CompactPCI cards ◆ Includes DLLs
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