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Find the *WinSystems PCM-UIO48A-8* at our website: *Click HERE*

WinSystems®

PC/104 MODULE

PCM-UIO48A-G
Universal 48-Point I/O with Interruptible Event Sense

FEATURES

- Supports 48 digital I/O lines
- Each line is capable of:
  - Bidirectional operation
  - Input, Output or Output with Read back
  - 12mA Sink Current
- Generates an interrupt on signal change-of-state:
  - Supports 24 event sense lines
  - Software selectable edge polarity for each line
  - Software enabled interrupt for each line
  - Change-of-state latched for each line
- Write-protection mask register for each 8-bit port
- Compatible with industry standard I/O racks
- Fused +5V logic supply for I/O modules
- 8- or 16-bit PC/104 interface
- +5 volt only operation
- RoHS compliant product
- Extended temperature range: -40ºC to +85ºC

The PCM-UIO48A-G is a highly-versatile PC/104 input/output module providing 48 lines of digital I/O. The major feature of this card is its ability to monitor 24 lines for both rising and falling digital edge transitions, latch them and then interrupt the host processor notifying that a change-of-input status has occurred. This is an efficient way of signaling the CPU of real-time events without the burden of polling the digital I/O points.

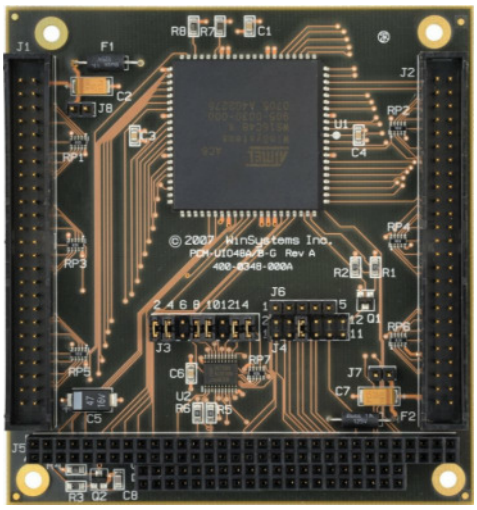
This PC/104 module is also compatible with industry standard isolated I/O signal conditioning modules from Opto-22, Gordos, and others. This module is RoHS-compliant.

FUNCTIONAL CAPABILITY

PC/104 Interface - The PCM-UIO48A-G is a PC/104 compatible stackthrough card which is I/O port mapped on any even 16-byte boundary.

Parallel I/O Controller - WinSystems has designed a WS16C48 Universal I/O controller ASIC to support the various input/output and interrupt configurations. The WS16C48 supports 48 digital I/O lines addressed through six contiguous registers. A six-bit Write Mask register allows the user to disable Writes on a byte basis to configure the group as a “Read Only” port.

Each I/O line is individually programmable for input, output, or output with Read back operation. The input lines are connected so the current status of its output port can be read from the corresponding input port (Read back).



Pictured: PCM-UIO48A-G-16

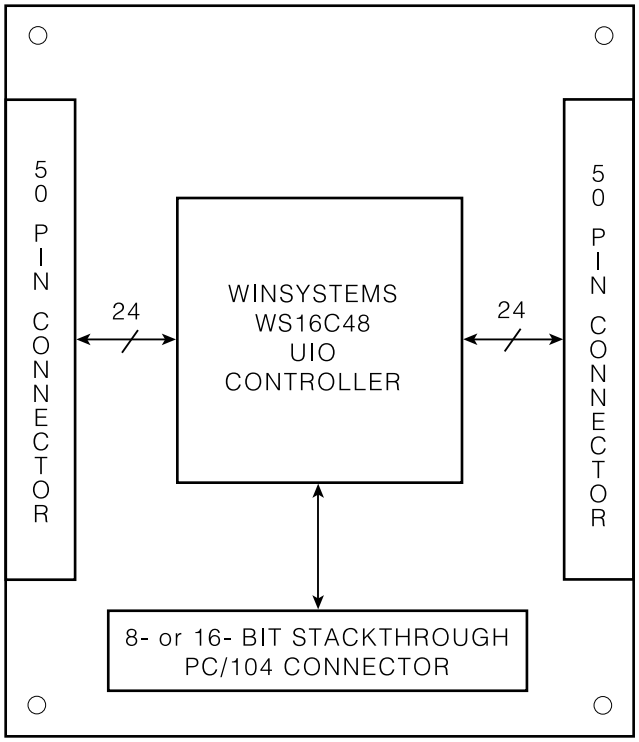
If the port is used as input only, then the corresponding output port bit must be cleared. Each output channel is latched and has an open collector driver (with a pull-up resistor) capable of sinking 12mA of current. This allows direct control of up to 48 opto-isolated signal conditioning modules to a single card for high density I/O support.

Event Sense Operation - Each WS16C48 ASIC supports 24 event sense lines to generate an interrupt when an event occurs. This means that 24 lines of the PCM-UIO48A-G can sense a positive or negative transition on the input. Transition polarity is programmable and enabled on a bit-by-bit basis. Each lines’ transition is latched by the event so that even short duration pulses will be recognized. An interrupt ID register is maintained for each line for writing more efficient Interrupt Service Routines.

Interrupts - The PCM-UIO48A-G can generate a system interrupt request which can be routed via jumper to IRQ channels 2 - 7 on the 8-bit or the additional five interrupt channel inputs on the 16-bit version.

I/O Connectors - The signals from the WS16C48 are wired to two 50-pin connectors, J1 and J2. Each connector supports 24 data lines which are alternated with 24 ground lines for reduced noise and crosstalk. Also, each connector has a 1A fuse on the +5 volt source to supply logic power for I/O module rack.

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PCM-UIO48A-G BLOCK DIAGRAM

Pin	Description	Pin	Description
1	IO23	2	Ground
3	IO22	4	Ground
5	IO21	6	Ground
7	IO20	8	Ground
9	IO19	10	Ground
11	IO18	12	Ground
13	IO17	14	Ground
15	IO16	16	Ground
17	IO15	18	Ground
19	IO14	20	Ground
21	IO13	22	Ground
23	IO12	24	Ground
25	IO11	26	Ground
27	IO10	28	Ground
29	IO9	30	Ground
31	IO8	32	Ground
33	IO7	34	Ground
35	IO6	36	Ground
37	IO5	38	Ground
39	IO4	40	Ground
41	IO3	42	Ground
43	IO2	44	Ground
45	IO1	46	Ground
47	IO0	48	Ground
49	+5V	50	Ground

J1 and J2 - Rack I/O Connector Pin-Out

The PCM-UIO48A-G's pinout is compatible with the industry standard 4 to 24 position I/O module mounting racks (Opto-22, Crydom, Gordos, etc.). The racks accept AC and DC modules which optically isolate the computer from electrical transients and excessive voltages from the field devices.

Four foot, 50 conductor ribbon cables such as the WinSystems' CBL-115-4 and CBL-129-4 connects the PCM-UIO48A-G to one I/O rack. Two cables are required to fully utilize this card, one for each rack. The cable will interface directly to a 4, 8, 16 or 24 module rack.

RoHS Compliant - This product is designed to meet the Directive on the Restriction of the use of certain Hazardous Substances in electrical and electronic equipment (RoHS) European Union directive 2002/95/EC.

SPECIFICATIONS

Electrical

PC/104 Bus: 8- or 16-bit stackthrough
Parallel Interface: 48 I/O lines, TTL compatible

Power Requirements

Vcc = +5V ±5% at 12mA (excluding rack power with no loads on the outputs)

Mechanical

Dimensions: 3.6" x 3.8" (90mm x 96mm)

Connectors

Digital I/O: J1 - J2, 50-pin dual 0.100" grid
Jumpers: 0.025" square posts

Environmental

Operating Temperature: -40ºC to +85ºC

ORDERING INFORMATION

PCM-UIO48A-G-8	48 channel Universal I/O module with 8-bit PC/104 interface
PCM-UIO48A-G-16	16-bit PC/104 interface version
CBL-115-4	4-ft. ribbon to Opto module rack, 50-pin socket on one end and edge termination on the other, non-RoHS compliant product
CBL-129-4	4-ft. ribbon cable, 50-pin. Both ends have a socket termination, non-RoHS compliant product

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