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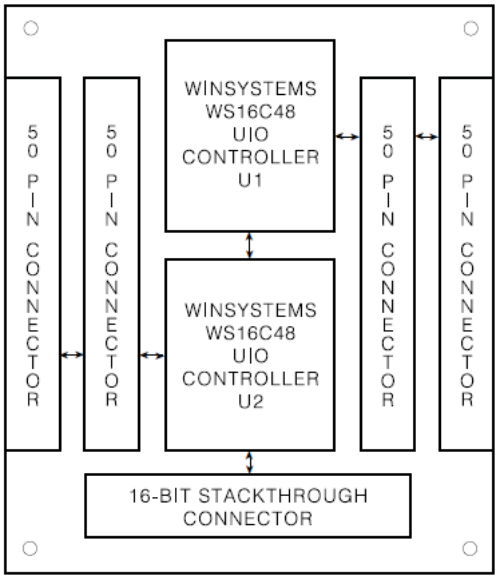
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PCM-UIO96B

Universal 96-Point Digital I/O with Interruptible Event Sense

Features

- 96 Bidirectional digital I/O lines
- Each line is capable of:
  - Input, Output or Output with Readback
  - 12mA sink current
- Supports 48 event sense lines
  - Generates an interrupt on signal change-of-state
  - 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
- 16-bit PC/104 interface
- +5 volt only operation
- Extended temperature range: -40°C to +85°C



PCM-UIO96B Block Diagram



Product Description

The PCM-UIO96B is a highly versatile PC/104 input/output module providing 96 lines of digital I/O. One important feature of this card is its ability to monitor 48 of the 96 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.

Parallel I/O Controller - WinSystems has designed the WS16C48 Universal I/O controller ASIC to support various input/output and interrupt configurations. The WS16C48 supports 48 digital I/O lines addressed through six contiguous registers as ports P0-P5. 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. Two WS16C48 chips are on the PCM-UIO96B.

Each I/O line is individually programmable for input, output, or output with readback operation. The input lines are connected so the current status of its output port can be read from the corresponding input port (readback). 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 96 opto-isolated signal conditioning modules to a single card for high-density I/O support.

PCM-UIO96B: Universal 96-Point I/O Module

Event Sense Operation - Each WS16C48 ASIC supports 24 event sense lines which can generate an interrupt when an event occurs. These lines are the first three I/O ports on the chip, P0-P2. Since two WS16C48s are onboard, the PCM-UIO96B can sense a positive or negative transition on up to 48 lines.

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.

The PCM-UIO96B can generate a system interrupt request which can be routed via a jumper block to IRQ channels 2 - 7, 10 - 12, 14, and 15. Both WS16C48s can generate an individual interrupt; however, the interrupt requests from both chips can also be OR'ed together.

PC/104 Interface - The PCM-UIO96B is a PC/104 compatible stackthrough card which is I/O port mapped on any even 32-byte boundary.

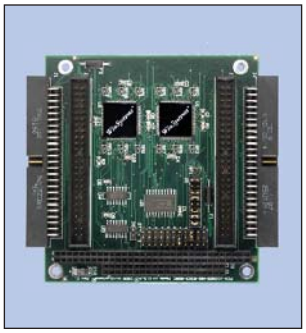
I/O Connectors - The signals from each WS16C48 are wired to two 50-pin connectors. Each connector supports 24 data lines and 24 ground lines for reduced noise and crosstalk. Each connector has a 1A fuse on the +5 volt source to supply logic power for an I/O module rack.

The PCM-UIO96B's pinout is compatible with the industry standard 4 to 24 position I/O module mounting racks. WinSystems offers industrial termination products including isolated input modules, isolated output modules, relay modules, and combinations of the three.

Software - Drivers for Linux and Windows® are available. Also, a basic library of C routines are available.

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PCM-UIO96B-G-16

Technical Specifications

Electrical

PC/104 Bus	16-bit stackthrough
Parallel Interface	96 I/O lines, TTL compatible with 12mA sink
Voltage	+5V ±5% @ 24mA (excluding rack power with no loads)

Environmental

Operational from	-40° to +85°C
RoHS compliant	

Mechanical

Dimensions	3.6 x 3.8 inches (90 x 96mm)
Weight	3.2 oz (91 gm)

Connectors

Digital I/O	J1 and J4, 50-pin right angle on 0.100"grid J2 and J3, 50-pin dual 0.100" grid

Ordering Information

I/O Modules

PCM-UIO48B-G-8	48 GPIO module with 8-bit PC/104 interface
PCM-UIO48B-G-16	48 GPIO module with 16-bit PC/104 interface

Industrial Termination Modules

ISM-TRM-COMBO	Eight relays, eight isolated input, and eight isolated output channels
ISM-TRM-ISO-IN	24 Line signal conditioning module with optically isolated inputs
ISM-TRM-ISO-OUT	24 Line signal conditioning module with optically isolated outputs
ISM-TRM-RELAY	16 Channel SPDT relay module PoE

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