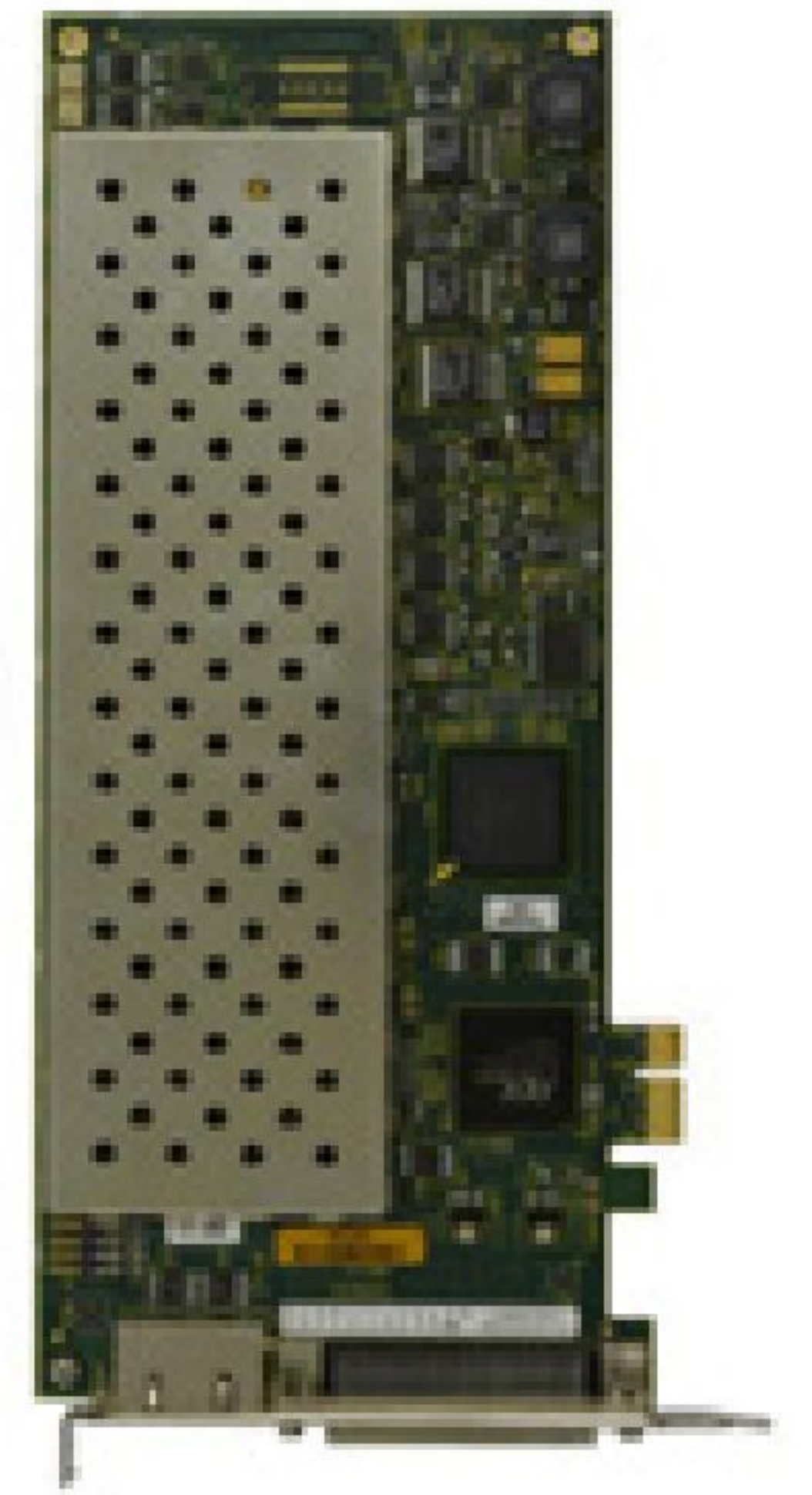


Delta Sigma Analog Input PCIe Cards

Concurrent's CP-AD3224 is a 32-channel analog to digital 24-bit delta sigma converter card with a PCI Express interface. The card is implemented using Cirrus Logic CS5368 delta-sigma converters. Each converter has an independently selectable clock source generated by a low jitter PLL. The interface is fully differential right up to the converter inputs for low noise and accurate measurements. Multi board clocking and synchronization is supported. A RedHawk™ Linux® driver with extensive API including DMA and interrupt support is available for both 32-bit and 64-bit architectures.



CP-AD3224

Features:

- ◆ 32-channel 24-bit Delta Sigma Analog to Digital Conversion
- ◆ Differential +/-10V or +/-5V Input
- ◆ Cirrus Logic CS5368 ADCs
- ◆ Industry Standard SCSI 68-pin Connector for inputs
- ◆ RJ-12 (6-pin phone style) Connectors for Multi-board Synchronization
- ◆ PCI Express x1 Revision 1.0a
- ◆ Supports MSI Interrupts
- ◆ Independent Clocking for Four Channel Groups
- ◆ Low Jitter Phase Lock Loop (PLL) Clock Generators
- ◆ Supports Multi-board Clocking & Synchronization
- ◆ Directly Addressable Conversion Data Registers
- ◆ 64K Word Conversion Data FIFO with DMA
- ◆ Low Noise Analog Power Generation
- ◆ Positive and Negative Calibration Voltage
- ◆ Gain and Offset Calibration Values Accessible
- ◆ Differential Input Impedance:
 - ◆ >1Meg ohm (10V), >200K ohm (5V)
- ◆ Input Over-Voltage Protection: +/- 30V
- ◆ Sampling Rate (Fs) 2Khz to 216Khz
- ◆ NIST Traceable Calibration Standard

Specifications:

Packaging

Full Height PCI Express 3.8" high,
9.5" long (10V), 8.0" long (5V)

Power Requirements

Less than 25 watts (3.3VDC @ 2
Amp, 12VDC @ 1.2 Amp)

Environmental

- Operating: 10o to 40o C
- Storage: -40o to 65o C
- Relative Humidity: 10 to 80%
non-condensing
- ROHS Compliant

Ordering Information:

- ◇ **CP-AD3224-DS-10**
32-channel, 24-bit Delta Sigma
+/-10 Volt A-to-D PCIe card
- ◇ **CP-AD3224-DS**
32-channel, 24-bit, Delta Sigma
+/- 5 Volt A-to-D PCIe card
- ◇ **WC-AD3224-DS**
Driver for RedHawk Linux
- ◇ **ICS-SWB-1242**
Wave Generation Package
- ◇ **ICS-SWB-1248**
SIMulation Workbench™ I/O License
- ◇ **CX-CBL-HSI-68-nn = 03, 06 or 10**
3/6/10-foot 68-pin Host Interface Cable
- ◇ **CX-ALOG-SYNC-nn = 01, 10 or 30**
1/10/30-foot Analog I/O Sync Cable
- ◇ **CX-CBL-AIO-BRKOUT**
Analog I/O Terminal Breakout Module



✉ info@concurrent-rt.com

🌐 concurrent-rt.com | wiki.simwb.com

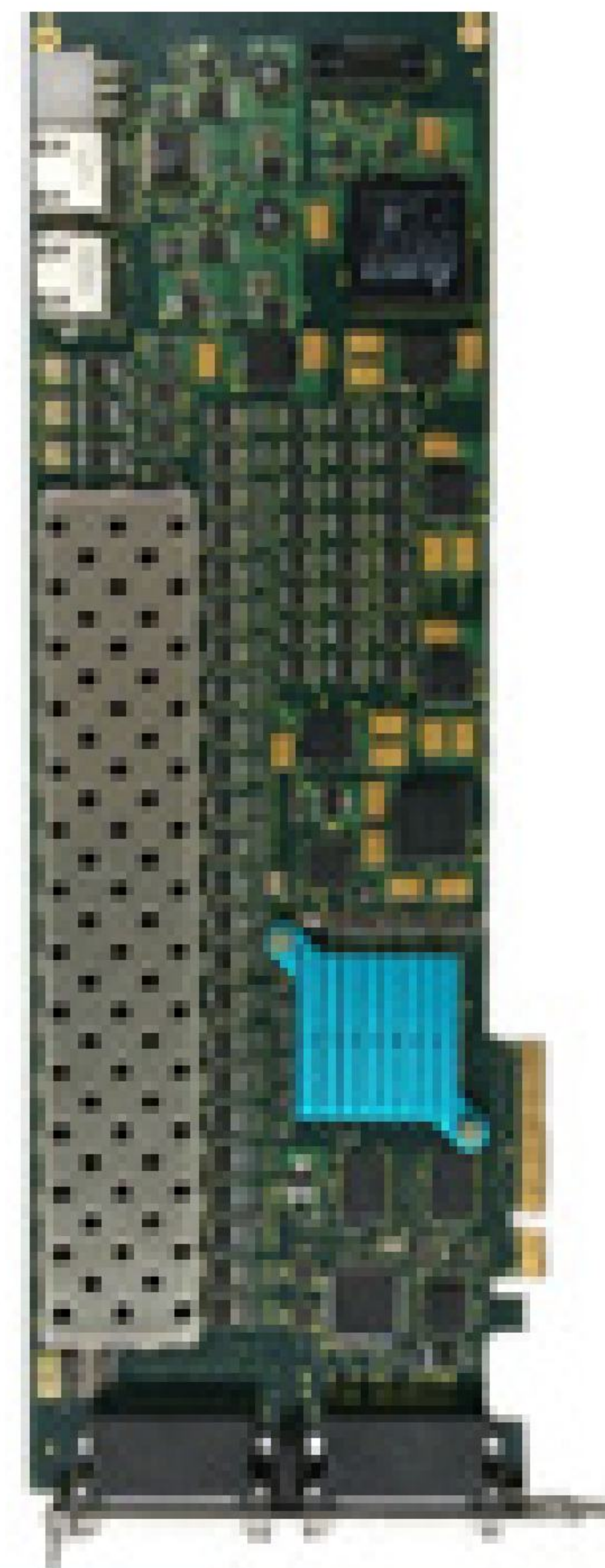
☎ 800.666.4544 | 954.974.1700

Digital Input Change-of-State Card

Concurrent Real-Time's Change-of-State (COS) card is a 64-channel TTL interface that can track the change of state of digital inputs at 100 MHz (10 nanoseconds). The card features an x4 lane PCI Express interface for high speed transfer of data to and from the card. Individual channels can be masked to disable change detection. A 10 microsecond clock is also output on pin DIO_95 that can synchronize other systems to the clock on the COS card.

The COS card uses a FIFO that has a maximum depth of 128 elements. Each element contains a transition value (64-bit long long) where each bit represents the transition value for corresponding digital input channel. Also provided is a time stamp value (64-bit long long) for the corresponding transition value entry in the FIFO. The time stamp calculator is based on the card's 100 MHz clock and stores the tick count when a transition occurs. Data is recorded into the FIFO when any of the channels change their state or when the 64-bit counter rolls over.

The COS card is fully supported by Concurrent's RedHawk Linux operating system on iHawk SIMulation Workbench platforms. Multiple cards can be installed in a single system. A 68-pin VHDCI connector is mounted on each card for connection to external devices.



Specifications:

Input

- 64-channel TTL
- 100 MHz base Frequency
- 128 element FIFO
- 64-bit transition value
- 64-bit time stamp

General

- FPGA-based COS board
- PCIe x4 form factor, full-height, half-length
- Supports multiple cards per systems
- VHDCI 68-pin connector
- Power consumption: ~5 watts

Ordering Information:

- ◇ **CP-COS-64**
64-channel change-of-state card
- ◇ **WC-CP-FIO**
RedHawk Linux driver
- ◇ **ICS-SWB-1279**
SIMulation Workbench I/O License

Accessories:

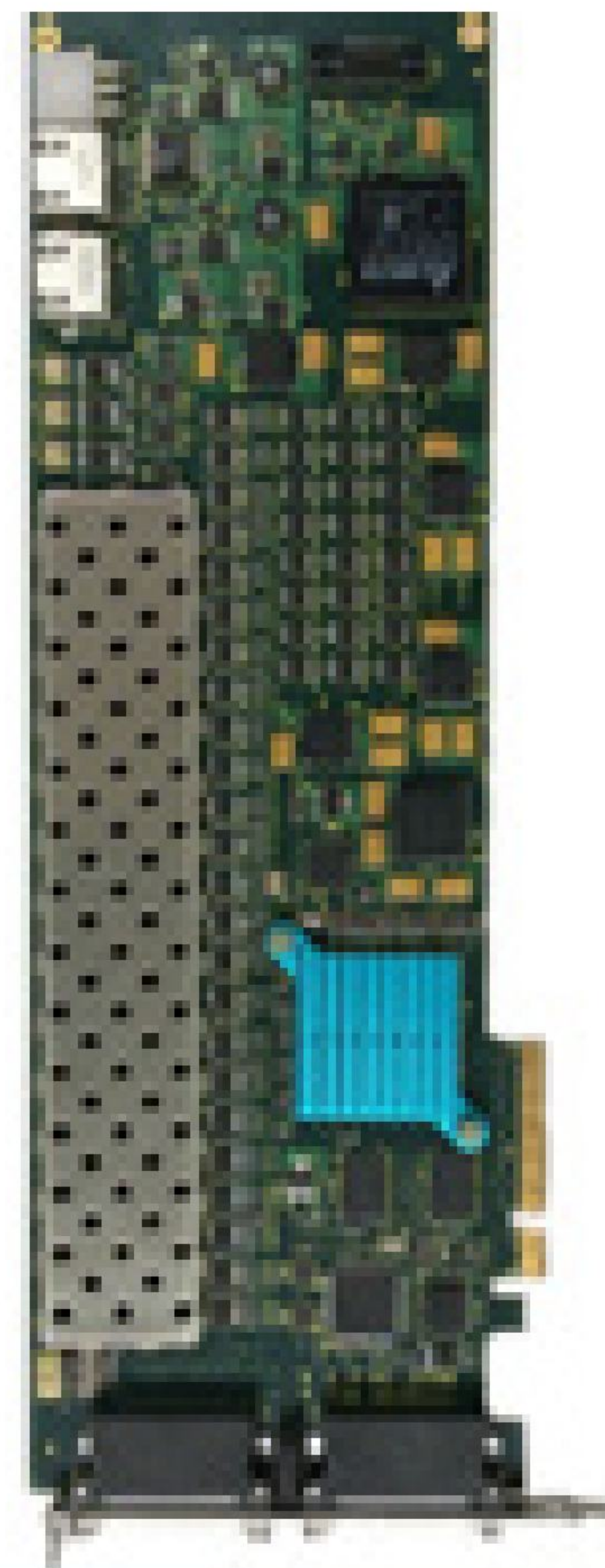
- ◇ **CX-CBL-HSI-F-01**
1-meter 68-pin interface cable
- ◇ **CX-CBL-HSI-F-02**
2-meter 68-pin interface cable
- ◇ **CX-CBL-HSI-F-03**
3-meter 68-pin interface cable

Digital Input Change-of-State Card

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The COS card uses a FIFO that has a maximum depth of 128 elements. Each element contains a transition value (64-bit long long) where each bit represents the transition value for corresponding digital input channel. Also provided is a time stamp value (64-bit long long) for the corresponding transition value entry in the FIFO. The time stamp calculator is based on the card's 100 MHz clock and stores the tick count when a transition occurs. Data is recorded into the FIFO when any of the channels change their state or when the 64-bit counter rolls over.

The COS card is fully supported by Concurrent's RedHawk Linux operating system on iHawk SIMulation Workbench platforms. Multiple cards can be installed in a single system. A 68-pin VHDCI connector is mounted on each card for connection to external devices.



Specifications:

Input

- 64-channel TTL
- 100 MHz base Frequency
- 128 element FIFO
- 64-bit transition value
- 64-bit time stamp

General

- FPGA-based COS board
- PCIe x4 form factor, full-height, half-length
- Supports multiple cards per systems
- VHDCI 68-pin connector
- Power consumption: ~5 watts

Ordering Information:

- ◇ **CP-COS-64**
64-channel change-of-state card
- ◇ **WC-CP-FIO**
RedHawk Linux driver
- ◇ **ICS-SWB-1279**
SIMulation Workbench I/O License

Accessories:

- ◇ **CX-CBL-HSI-F-05**
05-meter 68-pin interface cable
- ◇ **CX-CBL-HSI-F-02**
2-meter 68-pin interface cable
- ◇ **CX-CBL-HSI-F-03**
3-meter 68-pin interface cable
- ◇ **CX-CBL-HSI-F-15**
15-meter 68-pin interface cable