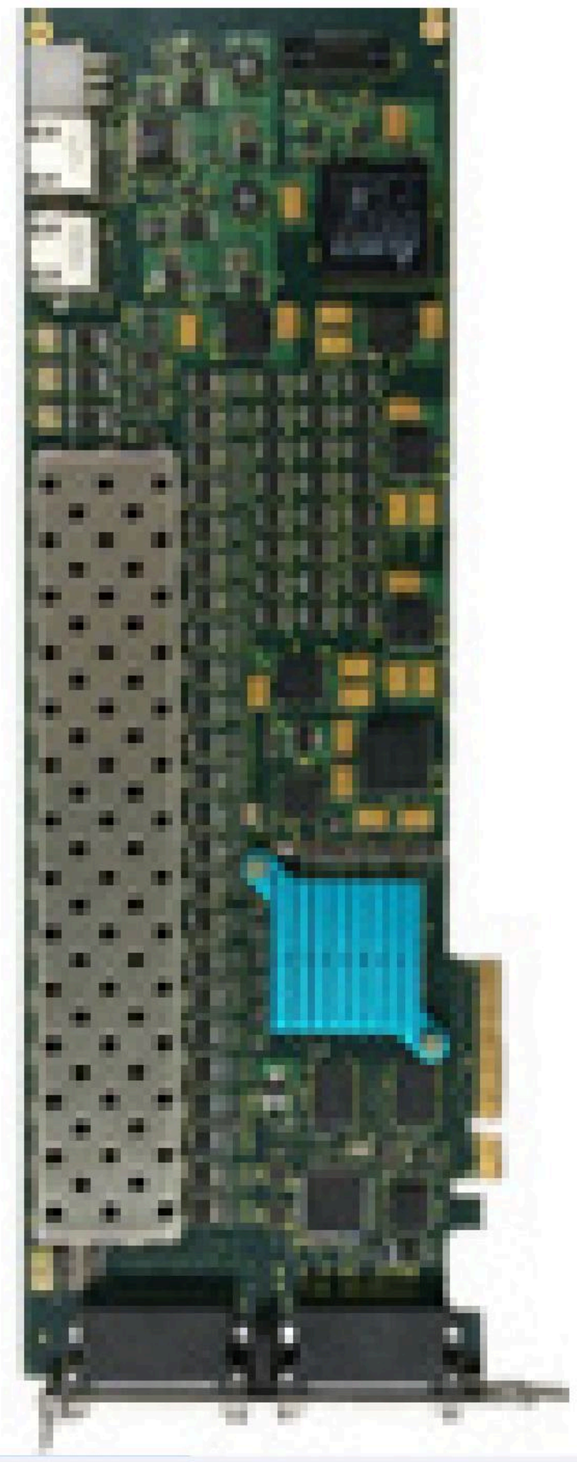
# Digital Input Change-of-State Card

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

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