

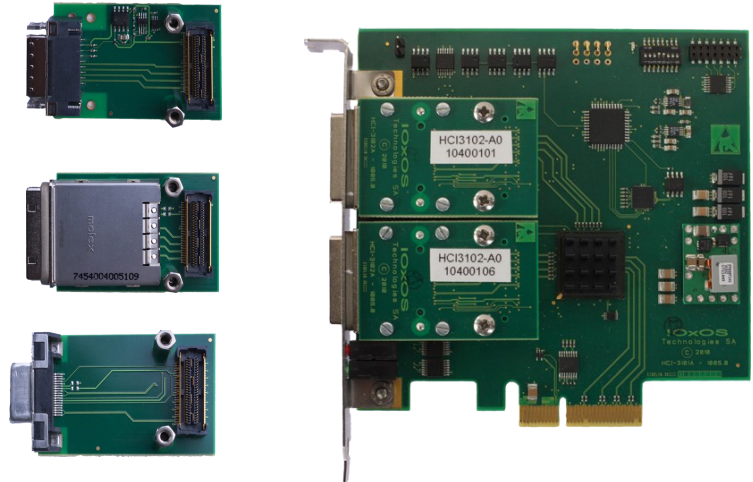


HCI_3101 - Host Intelligent PCIe Adapter PCI Express x4 Switch based

Data Sheet HCI_3101

Features

- Host PCI Express x4 Add-in Card.
- 2 PCIe x4 Sockets for Copper and Optical Media Adapters.
- PCI Express x4 & x1 External Cabling.
- PCI Express x4 over DDR Infiniband cable and CX4 Optical active cable.
- Low cost standard cable and Optical fiber.
- 3 Ports PCI Express x4 GEN1 / GEN2 Switch with 4 independent DMA channels.
- PCIe x4 Non-Transparent Upstream and Transparent Downstream Ports support.
- Clock Domain isolation for Spread Spectrum and Constant Frequency Clock support.
- CPLD logic for PCIe sideband signals and front panel LED display.
- Low Power consumption.



Overview

IOxOS Technologies introduces the HCI3101 for improving the connectivity of its PCI Express Intelligent platforms PEV1101 and IPV1102. The focus of this PCIe Switch based board are:

- PCIe clock domains isolation to support Spread Spectrum Clocking from the PC mother board
- Flexible configuration for the PCIe Media selection through the use of removable Media adapters.

PCI Express External Cabling

The 2 PCIe x4 sockets are full compliant with the PCI-SIG PCI Express External Cabling Rev.1.0 specification. Each of the PCI Express x4 channel implements the sideband signals for the external connections to a PCIe Upstream Subsystem.

In addition, the P3 socket (Port 2) can be configured as Non-Transparent Upstream through DIP-Switch and Jumper setting. This allows to connect an external PCIe Root-Complex agent, like another PC or an intelligent PCI Express platform, with the isolation of the two PCIe Clock domains.

PCI Express over Optical Fiber

The 2 PCIe x4 sockets can be populated with the HCI3103 adapter providing the PCIe connectivity for both the DDR/QDR Infiniband copper cables and the CX4 active Optical cables. These cables are widely available from stock on the WEB and exist in different standard lengths and qualities.

Front Panel LED Display

These 6 LED show the status for the 3 PCI Express Ports (GEN1/GEN2) and display CFC/SSC clock mode selection and error conditions.

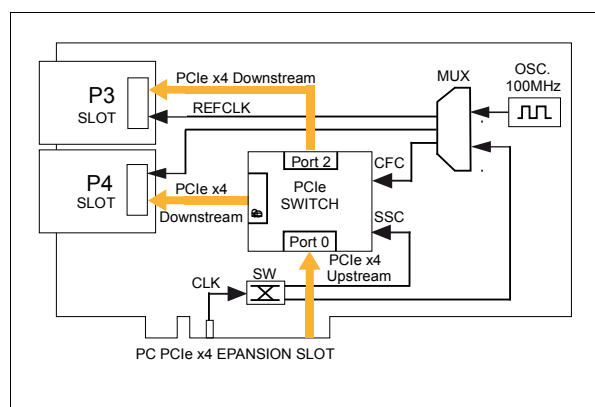
PCI Express Switch

The HCI_3101 Host adapter integrates a complete GEN2 PCI Express Switch for dual-clock time domain systems. This allows to support both Constant Frequency Clock (CFC) and Spread Spectrum Clocking (SSC) PCIe domain isolation.

The PCI Express Switch provides 3 Ports PCI Express x4 and integrates 4 independent Channels engine for Direct Memory Access (DMA).

The Transparent Upstream Port_0 is connected to the Host Personal Computer PCI Express x4 socket and the Port_1 & Port_2 are connected to the PCIe modules as the following:

- Port_2 : P3-PCIe x4 Upper Slot for Media Adapter
- Port_1 : P4-PCIe x4 Lower Slot for Media Adapter



HCI3102 Media adapter

This module implements a MOLEX IO connector family series 74540 (iPass™ x4). It provides standard connectivity for the PCI Express x4 External Cabling.



Note: Provision is made on the PCB for populating resistor strap to supply 3.3Volts Power over the cable if required (2A fuse protection is implemented on the HCI3101 socket).

1.0m PCIe x4 cable	xx
3.0m PCIe x4 cable	xx
7.0m PCIe x4 cable	xx

HCI3103 Media adapter

This module implements a standard microGIGACN™ connector with latch. It provides connectivity for both the DDR/QDR Infiniband copper cable (up to 30m) and the CX4 active Optical Fiber cable (up to 100m). The on board Smart-Media detection logic supplies automatically the 3.3Volts power for the optical driver when an active CX4 cable is detected.

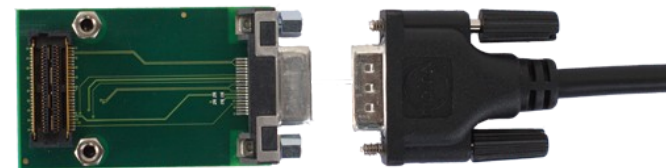


Beware: CX4 cables exist with CX4-CX4 connectors or CX4-QSFP connectors. CX4 with latch is required

10m CX4-CX4 optical	xx
20m CX4-CX4 optical	xx
50m CX4-CX4 optical	xx
100m CX4-CX4 optical	xx

HCI3104 Media adapter

This module implements a MOLEX IO connector family series 74960 . It provides connectivity for the standard PCI Express x1 External Cabling.



Note: Provision is made on the PCB for populating resistor strap to supply 3.3Volts Power over the cable if required (2A fuse protection is implemented on the HCI3101 socket).

0.5m PCIe x1 cable	xx
1.0m PCIe x1 cable	xx
3.0m PCIe x1 cable	xx

System Environment

Operating Temperature	0 °C to +50 °C.
Add-In Card Form Factor	Standard Height
Add-In Card Bracket	Standard Height only
PCIe Extension socket requirement	PCI Express x4 / x8 / x16
Forced Air Flow requirement	No specific requirements
Power Supply Rail consumption	Low power Slot 10 Watts: 3.3V 0.5A / 12V 0.3A



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Ordering Information

Article Reference	Product Description
HCI3101-A2	HCI3101 Add-in Card equipped with 1 PCIe x4 External Cabling modules
HCI3101-B2	HCI3101 Add-in Card equipped with 2 PCIe x4 External Cabling modules
HCI3101-B3	HCI3101 Add-in Card equipped with 2 DDR Infiniband / CX4 Optical modules
HCI3101-B4	HCI3101 Add-in Card equipped with 2 PCIe x1 External Cabling modules

Note: Call IOxOS Technologies for others HCI configurations

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