# PCI-E to HIBI

ver. 0.1

author: Juha Arvio

documentation: Juha Arvio

# Document history

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| Author | Version | Project | Date | Description |
| Juha Arvio | 0.1 | Funbase | 18.05.2010 |  |

# PCI-E to HIBI component

PCI-E to HIBI is an adapter component to interface a PCI-E bus to HIBI. The first version of this adapter comprises of a sopc system which has only two components. The components are an Altera PCI-E controller and an Avalon to HIBI adapter. Additional details can be read from the datasheet of Avalon to HIBI adapter.

PCI-E is limited to four lanes due to the restrictions of generating the Altera PCI-E controller to a sopc system. Later versions of this component which use the Megawizard in Quartus, can interface to an eight lane PCI-E bus.

## Interface



## Design files

|  |  |
| --- | --- |
| File name | Description |
| hdl\pcie\_to\_hibi\_4x.vhd | Main hdl file |
| hdl\pcie\_to\_hibi\_4x\_sopc.vhd | Sopc system top hdl file, generated with Sopc builder |
| hdl\pcie\_to\_hibi\_4x\_sopc\_burst\_0.vhd | Sopc system hdl file, generated with Sopc builder |
| hdl\pcie\_to\_hibi\_4x\_sopc\_burst\_1.vhd | Sopc system hdl file, generated with Sopc builder |
| hdl\pcie\_to\_hibi\_4x\_sopc\_burst\_2.vhd | Sopc system hdl file, generated with Sopc builder |
| hdl\pcie\_to\_hibi\_4x\_sopc\_burst\_3.vhd | Sopc system hdl file, generated with Sopc builder |
| hdl\pcie\_to\_hibi\_4x\_sopc\_burst\_4.vhd | Sopc system hdl file, generated with Sopc builder |
| hdl\pcie\_to\_hibi\_4x\_sopc\_burst\_5.vhd | Sopc system hdl file, generated with Sopc builder |
| hdl\a2h.v | Sopc instantiation hdl file for Avalon to HIBI component, generated with Sopc builder |
| hdl\pcie.vhd | Sopc instantiation hdl file for Altera’s PCI-E controller, generated with Sopc builder |
| hdl\pcie\_core.vhd | Sopc instantiation hdl file for Altera’s PCI-E controller, generated with Sopc builder |
| hdl\pcie\_serdes.vhd | Sopc instantiation hdl file for Altera’s PCI-E controller, generated with Sopc builder |
| hdl\dma.vhd | Sopc instantiation hdl file for Altera’s DMA controller, generated with Sopc builder |

## Required components

|  |  |
| --- | --- |
| Component name | Description |
| Avalon to HIBI | Avalon to HIBI adapter |
| PCI Express 4x controller | PCI-E controller generated with PCI Express compiler 9.1 |

## Example system

