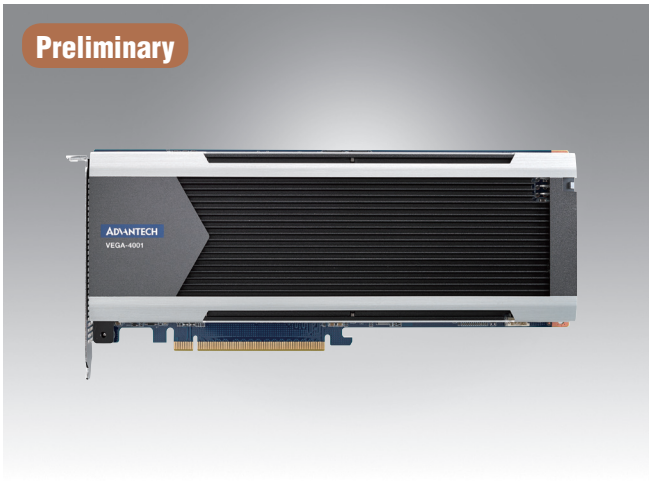
VEGA-4001

Dual Xilinx Ultrascale+ FPGA Accelerator for Machine Learning and Artificial Intelligence



Features

- Dual Xilinx Ultrascale+ FPGA (XCVU9P)
- 16GB DDR4-2400 memory per FPGA in 4-ch ECC configuration
- On-board PCIE switch supporting FPGA peer to peer data link
- Additional Aurora Link (GTYx2) interconnect
- PCIe Gen-3 x16 host interface
- Full height, GPU length (10.5"/267mm) form factor
- Up to 225W power consumption
- Double-slot heatsink
- Fully supported by Xilinx SDAccel and Vivado toolchain

Introduction

VEGA-4001 is a FPGA-based full height GPU length double deck PCI Express card which is ideal for accelerating machine learning, and video and data analytics both in appliances and in scale-out data center servers.

Video intelligence is changing the way we interact with the world around us enabling smarter cities, transportation and communication systems. Behind this new intelligent world, machine learning, big data and artificial intelligent algorithms work to analyze and classify locally generated video content in real time. The resulting processing workloads are not only immense, but rapidly evolving, so the need for both processing acceleration and flexibility is critical. The latest generation of Field Programmable Gate Arrays (FPGAs) from Xilinx offers this acceleration in a power efficient manner while retaining future-proof reconfigurable capability; and Advantech's new VEGA-4001, a dual Xilinx XCVU9P configuration, can provide access to this technology in a deployable PCI Express form factor, reducing development risk and gaining time-to-market advantages. The VEGA-4001 is fully supported by the Xilinx SDAccel development environment with FFMPEG integration, and Xilinx also offers optimized support libraries for several Deep Neural Network frameworks including Caffe and Mxnet, with support for TensorFlow.

Advantech can also provide custom development support services for VEGA-4001 including FPGA IP provision and system integration, and the board can be delivered already pre-integrated in a range of server platforms. Please contact your Advantech representative for more details.

Specifications

Feature	Operating System	Linux Drivers Support Planned
	Development Kits	SDAccel Support FFmpeg, 3rd party Intellectual Property Blocks
Physical Characteristic	Interface	PCI Express Gen3 x16
	Power Consumption	Up to 225W
	Dimensions	PCI Express 10.5" Length Full Height, double-deck 266.7 x 111.15 mm
Environmental	Operating Temperature	0 to 50 degrees Celsius
	Non-operating Temperature	-40 to 85 degrees Celsius
	Operating Humidity	50 to 95% (non-condensing)
	Non-operating Humidity	50 to 95% (non-condensing)

Applications

- Machine Learning
- Social Media Video Analytics
- Autonomous Driving
- Cloud-based Surveillance Analytics
- Video Transcoding

Ordering Information

Part Number	Description
VEGA4001X0A0-ES	GPU size Video Intelligence PCIe Card