GE
Intelligent Platforms

6U OpenVPX CUDA STARTER KIT

19" Starter Cage with SBC and 3 GPUs

Features

- 4 slot 6U OpenVPX chassis with uncommitted backplane
- Three NVIDIA CUDA GPUs
- INTEL Penryn 2.26GHz Core 2 Duo
- 2 x 10GE Data Plane Ports
- x16 lane PCIe Expansion Plane
- 2 x 1000BaseT & 2 x 1000Base-BX Control Plane
- 2 spare OpenVPX pay load slots
- Rear transition modules & cables supporting multiple Data & Expansion Plane configurations
- 4 x Rotary Disk Drives
- CentOS 64 bit LINUX & CUDA SDK
- AXISLIB-X86 & AXISLIB-GPU DSP & Math optimized VSIPL & RSPL libraries

The 6U OpenVPX CUDA Starter Kit from GE Intelligent Platforms Embedded Systems MIL/AERO Products Group greatly reduces risk and time to solution for applications that can leverage the performance of multiple GPGPU clusters.

Now defense system integrators can move their high performance computing (HPC) applications onto GE's rugged, scalable, multi-node GPGPU platforms to deliver more capable deployed radar, sonar, image processing and extended intelligence, surveillance and reconnaissance (ISR) mission profiles.

GE's OpenVPX GPGPU solutions are ideal for applications that require increased performance in size, weight and power (SWaP) constrained deployed platforms.

The IPN250, Intel Penryn Core2 Duo plus NVIDIA GT240 96 core COTS processor, paired with our NPN240, dual NVIDIA GT240 expansion card, are the first in a new family of 6U OpenVPX GPGPU cluster solutions targeting extended temperature, harsh environment mission pay loads for airborne, ground vehicle and underwater platforms.

GE's 6U OpenVPX Starter Kit includes a four slot, uncommitted backplane along with rear transition modules and cables supporting multiple OpenVPX fabric topologies. This innovative concept enables a variety of multi-board / multi-node GPGPU cluster configurations during system design and application development.

The system integrator can now define and demonstrate multiple optimized architectures on the deployable COTS boards to minimize risk before making hard decisions about the SWaP profile of the deployed platform.

In addition to CUDA or OpenCL based image and signal processing, the 6U CUDA Starter Kit can support state-of—the-art performance for graphics, video and display applications running OpenGL and other graphics libraries.

The lab system comes with pre-installed IPN250 BIOS, CentOS 64bit LINUX (based on Red Hat) and a CD with the required CUDA drivers providing a quick start for system bring up. Three additional hard drives are included to facilitate booting multiple OS platforms to cater for the widest range of applications. The system will run versions of Windows7 and Windows7 Embedded (not included).

AXISLIB optimized multithreaded DSP and math libraries are available for the INTEL SSE enabled multicore CPU (AXISLIB-X86). In addition GE can now offer tuned VSIPL libraries for the NVIDIA GPU platform (AXISLIB-GPU).

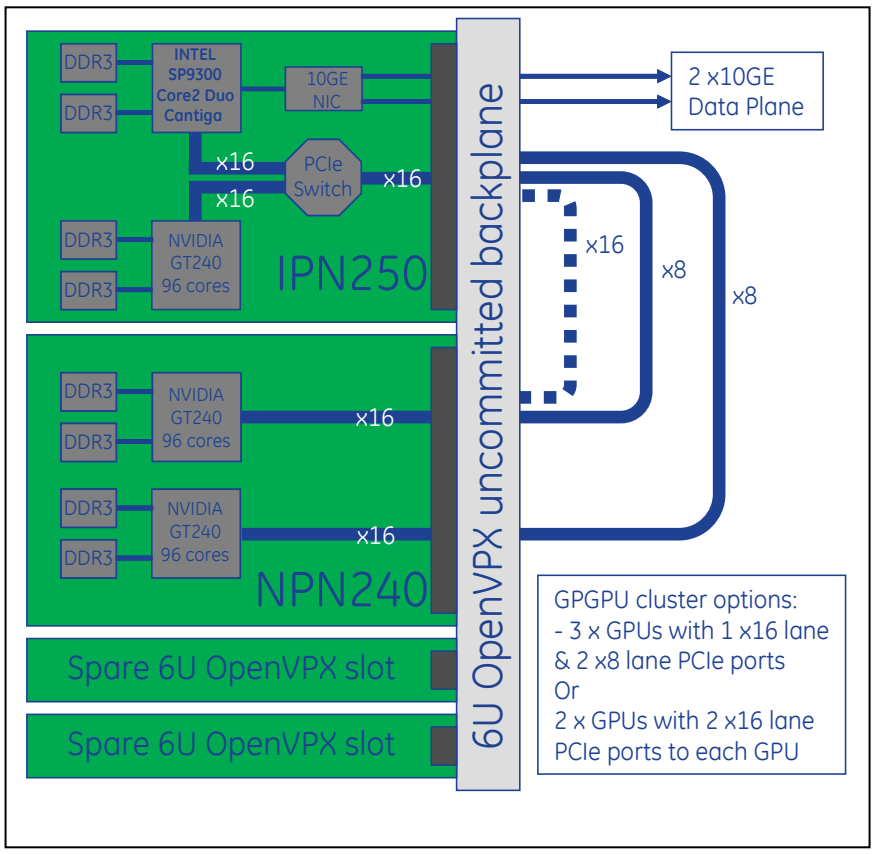
The chassis can accommodate other GE SBCs, I/O solutions and suitable third party OpenVPX COTS boards for additional flexibility.

SC-S-CUDA6USK1 – CUDA Starter Kit

Specifications

- SCVPX6U - 19" 4 slot OpenVPX rack mount lab development chassis
- IPN250 - Intel Penryn Core2 Duo + NVIDIA GT240 96 core GPGPU 6U OpenVPX processor card
- NPN240 - Dual NVIDIA GT240 6U OpenVPX processor card
- Data plane – 2 x 10GBase-CX4
- Expansion plane – 1 x16 or 2 x8 lane PCIe ports
- Control plane – 2 each 1000base-T & 1000base-BX on IPN250
- IPN250 User I/O –
  - 4 x USB, COM1 & 2, 8 x GPIO
  - 2 x SATA
  - Dual link DVI, HDMI 2 x VGA, audio, TV capture
- NPN240 User I/O –
  - 2 x Dual link DVI
  - 2 x HDMI
  - 4 x VGA
  - 2 x TV Capture
- 4 x 250GB SATA HDDs with ESATA interfaces
- 2 x Fabric rear transition modules
- One each IPN250 and NPN240 rear transition module assemblies & cables.
- 650W ATX power supply with primary power switch
- Air cooled chassis with variable speed fans
- CentOS 64 bit LINUX pre-installed
- CUDA drivers

System Block Diagram showing Data Plane and Expansion Plane interconnect



Ordering Information

SC-S-CUDA6USK1 – 6U CUDA Starter Kit

Includes:

- IPN250-111100013 6U OpenVPX GPGPU Processor Card &
- NPN240-100013 6U OpenVPX Dual NVIDIA GT240 Card
- Rear transition modules, cables & SW

About GE Intelligent Platforms

GE Intelligent Platforms, a General Electric Company (NYSE: GE), is an experienced high-performance technology company and a global provider of hardware, software, services, and expertise in automation and embedded computing. We offer a unique foundation of agile, advanced and ultra-reliable technology that provides customers a sustainable advantage in the industries they serve, including energy, water, consumer packaged goods, government and defense, and telecommunications. GE Intelligent Platforms is a worldwide company headquartered in Charlottesville, VA and is part of GE Home and Business Solutions. For more information, visit www.ge-ip.com.

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