VPX3-4933

3U VPX GPGPU Processor Card with Chip-Down NVIDIA® Quadro® Pascal™ P5200, 8.7 TFLOPS, 4 Video Outputs

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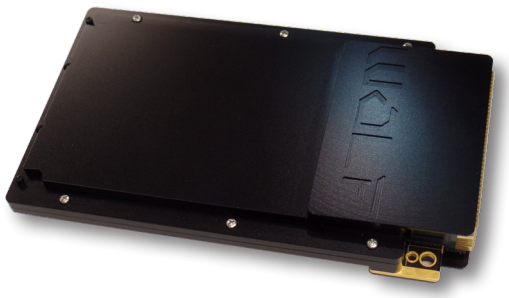

Key Features

- NVIDIA P5200 GPGPU/Inference Engine
- 2560 cores, up to 8.7 TFLOPS
- 16 GB GDDR5 256-bit
- Max memory bandwidth: 243 GB/s
- 4 simultaneous video outputs: 3 DisplayPort++ 1.4 & 1 DVI
- PCIe® Gen 3 x8 or x16
- Operating power configurable hard cap: 40-150W

Applications

- ISR and EW applications (including deep learning) where TFLOPs of accelerated processing are required
- High-performance radar, SIGINT, EO/IR, and data fusion ingest, processing, and display

Overview

Providing up to 8.7 TFLOPS, this rugged VPX3-4933 GPGPU board features a chip-down design to meet rugged military and aerospace specifications. In addition to providing top-of-the-line processing power from its Pascal GP104 featuring 2560 CUDA® cores, the GPU also sports the largest maximum memory bandwidth of 243 GB/s.

This module includes three DisplayPort 1.4 outputs, which supports High Dynamic Range (HDR) video at resolutions of 4K at 120 Hz or 5K at 60 HZ with 10-bit color depth. The DVI port supports up to 1920x1200 resolution. The VPX3-4933 also features a NVENC/NVDEC accelerator for HEVC (H.265) and AVC (H.264) encode/decode functionality.

Due to the critical importance of size, weight, and power (SWaP) in aerospace and defense applications, the GPU on the ruggedized VPX3-4933 is tune-able, tuned to maximize GPGPU capability while minimizing power usage.

The VPX3-4933 is available in air-cooled and conduction-cooled rugged formats. For additional options, please contact Curtiss-Wright.

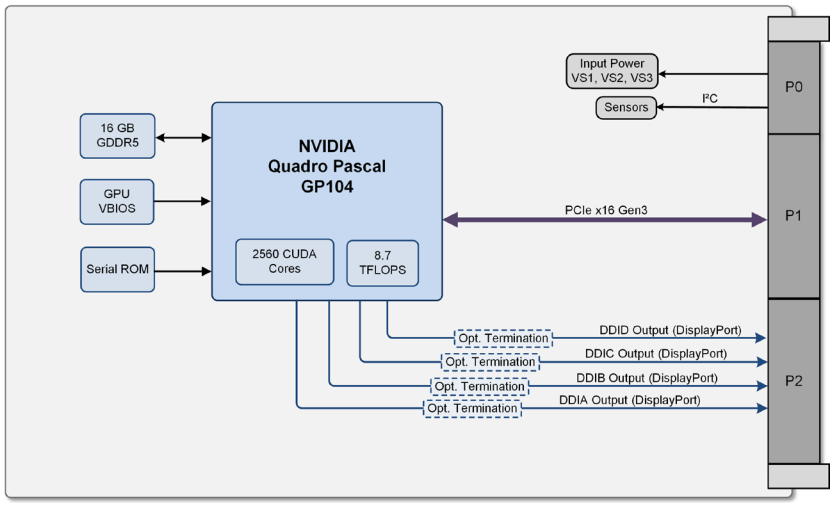

Figure 1: VPX3-4933 block diagram

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Specifications

Processor

- NVIDIA Quadro Pascal 5200
  - 2560 cores, up to 8.7 TFLOPS
  - 16 GB GDDR5
  - Max memory bandwidth: 243 GB/s
  - Memory width: 256-bit
- PCIe Gen 3 x4, x8 or x16

Video Display

- 4 x independent simultaneous video outputs
  - 3 x DisplayPort++ 1.4 supporting up to 4k @ 120 Hz or 5k @60 Hz with 10-bit (HDR) color depth
  - 1 x DVI: 1920 x 1200 resolution
- NVENC/NVDEC accelerator for HVEC (H.265) and AVC (H.264) hardware encode/decode
- Front and rear I/O configurations
- Video termination provided

Power

- +5V or +12V centric
- Configurable GPU hard cap: 40-150W

Environmental

- High level of ruggedization
  - Rugged air-cooled or conduction-cooled
  - MIL-STD-810, IPC 6012 Class 3
  - Humiseal 1B73 Conformal coating
  - Operating temperature -40° to 85°C
  - Other environmental specifications are per Wolf Advanced Technology

Software Support

- NVIDIA drivers supporting Linux®
  - CUDA Toolkit 9.0, CUDA Compute version 6.1
  - OpenCL™, OpenGL® 4.5
  - Vulkan™, DirectX graphics

Rear Transition Module

For building systems in the lab environment, Curtiss-Wright provides a Rear Transition Module (RTM) that plugs into the back side of the VPX3-4933's backplane and provides access to 1 x DVI and 3 x MiniDP.

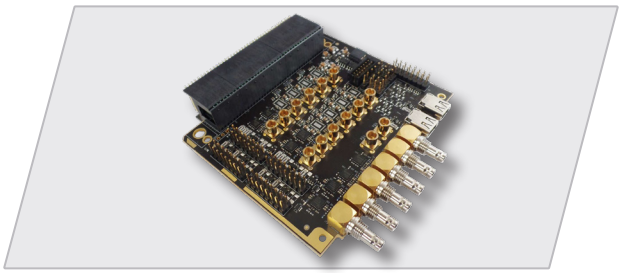

Figure 2: VPX3-4933 RTM

Ordering Information

TABLE 1	VPX3-4933 ordering information
PART NUMBER	VARIANTS
VPX3-4933-A141-100	3U OpenVPX module with NVIDIA Quadro Pascal P5200 › 2560 CUDA cores, 16 GB GDDR5, 8.7 TFLOPS › Air-cooled, “1.0” pitch, temperature range (-40 to 85°C) › 8 lane PCIe Gen 3, 5V Centric › 4 display outputs: 3xDP++ , 1xDVI
VPX3-4933-A141-101	3U OpenVPX module with NVIDIA Quadro Pascal P5200 › 2560 CUDA cores, 16 GB GDDR5, 8.7 TFLOPS › Air-cooled, “1.0” pitch, temperature range (-40 to 85°C) › 8 lane PCIe Gen 3, 5V Centric, › 4 display outputs: 3xDP , 1xDVI
VPX3-4933-A141-200	3U OpenVPX module with NVIDIA Quadro Pascal P5200 › 2560 CUDA cores, 16 GB GDDR5, 8.7 TFLOPS › Air-cooled, “1.0” pitch, temperature range (-40 to 85°C) › 16 lane PCIe Gen 3, 5V Centric › 4 display outputs: 3xDP , 1xDVI
VPX3-4933-A141-201	3U OpenVPX module with NVIDIA Quadro Pascal P5200 › 2560 CUDA cores, 16 GB GDDR5, 8.7 TFLOPS › Air-cooled, “1.0” pitch, temperature range (-40 to 85°C) › 16 lane PCIe Gen 3, 5V Centric, › 4 display outputs: 3xDP , 1xDVI
VPX3-4933-C141-100	3U OpenVPX module with NVIDIA Quadro Pascal P5200 › 2560 CUDA cores, 16 GB GDDR5, 8.7 TFLOPS › Conduction-cooled, “1.0” pitch, temperature range (-40 to 85°C) › 8 lane PCIe Gen 3, 5V Centric › 4 display outputs: 3xDP , 1xDVI
VPX3-4933-C141-101	3U OpenVPX module with NVIDIA Quadro Pascal P5200 › 2560 CUDA cores, 16 GB GDDR5, 8.7 TFLOPS › Conduction-cooled, “1.0” pitch, temperature range (-40 to 85°C) › 8 lane PCIe Gen 3, 12V Centric › 4 display outputs: 3xDP , 1xDVI
VPX3-4933-C141-200	3U OpenVPX module with NVIDIA Quadro Pascal P5200 › 2560 CUDA cores, 16 GB GDDR5, 8.7 TFLOPS › Air-cooled, “1.0” pitch, temperature range (-40 to 85°C) › 16 lane PCIe Gen 3, 5V Centric › 4 display outputs: 3xDP , 1xDVI
RTM3-4923-0000	3U OpenVPX Rear Transition Module for the VPX-4933, VPX-4923 › Provides access via 1xDVI and 3xMiniDP › For lab development use only