

SOSA-aligned OpenVPX 3U form factor graphics & GPGPU card based on NVIDIA Ampere architecture



### ADVANCED GPU CAPABILITIES

5,888 CUDA cores (3rd gen)  
184 Tensor Cores (3rd gen)  
46 RT Cores (2nd gen)

### HIGH-SPEED DATA TRANSFER

Support for NVIDIA ConnectX-7 SmartNIC and NVIDIA GPUDirect<sup>®</sup> RDMA

### 3U VPX SOSA-ALIGNED

SOSA™ Technical Standard slot profiles 14.6.11 and 14.6.13 with optional DisplayPort

## OpenVPX Graphics & GPGPU Card with NVIDIA ConnectX-7 SmartNIC

The Condor GR2S-A4500-ETH is a rugged OpenVPX 3U form factor video graphics and GPGPU card based on NVIDIA<sup>®</sup> Ampere™ architecture and the NVIDIA<sup>®</sup> ConnectX<sup>®</sup>-7 SmartNIC featuring high-speed Ethernet for data transfer up to 100 Gbps. This 3U VPX card is designed with the NVIDIA Ampere A4500 GPU with 16 GB GDDR6 graphics memory with Error Correction Code (ECC), 46 RT Cores, 184 Tensor Cores, and 5,888 CUDA<sup>®</sup> cores. In addition, the NVIDIA Ampere A4500 GPU supports PCI Express Gen 4, NVIDIA GPUDirect™ RDMA, and delivers up to 17.66 TFLOPS FP32 single floating point performance per slot. The Condor GR2S-A45000 offers high-performance embedded computing (HPEC) capabilities to C5ISR mission processing applications such as low-latency GPGPU processing, real-time ray tracing, deep learning (DL), and AI inferencing.

The Condor GR2S-A4500-ETH is designed with an NVIDIA<sup>®</sup> ConnectX<sup>®</sup>-7 SmartNIC which enables high-speed data transfer and enhanced storage performance with NVIDIA GPUDirect™ RDMA and RoCE. The ConnectX-7 fabric includes an embedded PCIe Switch along with SmartNIC function, this allows for better board function and reduces the overall power footprint (lower SWaP) of the card. The card supports 40/100Gb Ethernet DataPlane interface and is compatible with OpenVPX VITA connectors. The Condor GR2S-A4500-ETH has been designed in line with the SOSA™ Technical Standard slot profiles 14.6.11 and 14.6.13.



MIL-STD 810  
Shock



MIL-STD 810  
Temperature



MIL-STD 810  
Vibration



SWaP

# Condor GR2S-A4500-ETH Specifications

## Interface

3U VPX Form Factor  
8 or 16 Lane PCI Express 4.0

## Graphics Processor

NVIDIA RTX A4500 GPU (Ampere Architecture)  
Supporting DirectX 12, OpenGL 4.6, and Vulkan 1.2

## Graphics Memory

16 GB GDDR6 ECC Memory  
256-bit Memory Interface  
512 GB/s Memory Bandwidth

## GPGPU Capabilities

5888 CUDA Cores. 184 Tensor Cores. 46 RT Cores.  
Up to 17.66 TFLOPS FP32 Single Floating Point Performance  
Supports CUDA, CUDA-X, OpenCL™ and Shader Model 5.1  
H.265 (HEVC) / H.264 (MPEG4/AVC) Hardware Encode & Decode  
NVIDIA GPUDirect® RDMA, NVENC, NVDEC

## Profiles Supported

SLT3-PAY-1F1U1S1S1U1U2F1H-14.6.11-0  
SLT3-PAY-1F1U1S1S1U1U4F1J-14.6.13-0

## Software & Platform Support

Windows or Linux on x86  
VPX & PCIe

## Operating Temperature (MIL-STD-810)

-40°C to 70°C (Rugged Air Cooled)  
-40°C to 85°C (Rugged Conduction Cooled)

## Power Consumption

80 - 150 W

## Networking

NVIDIA® ConnectX®-7 SmartNIC  
40/100Gb Ethernet DataPlane interface

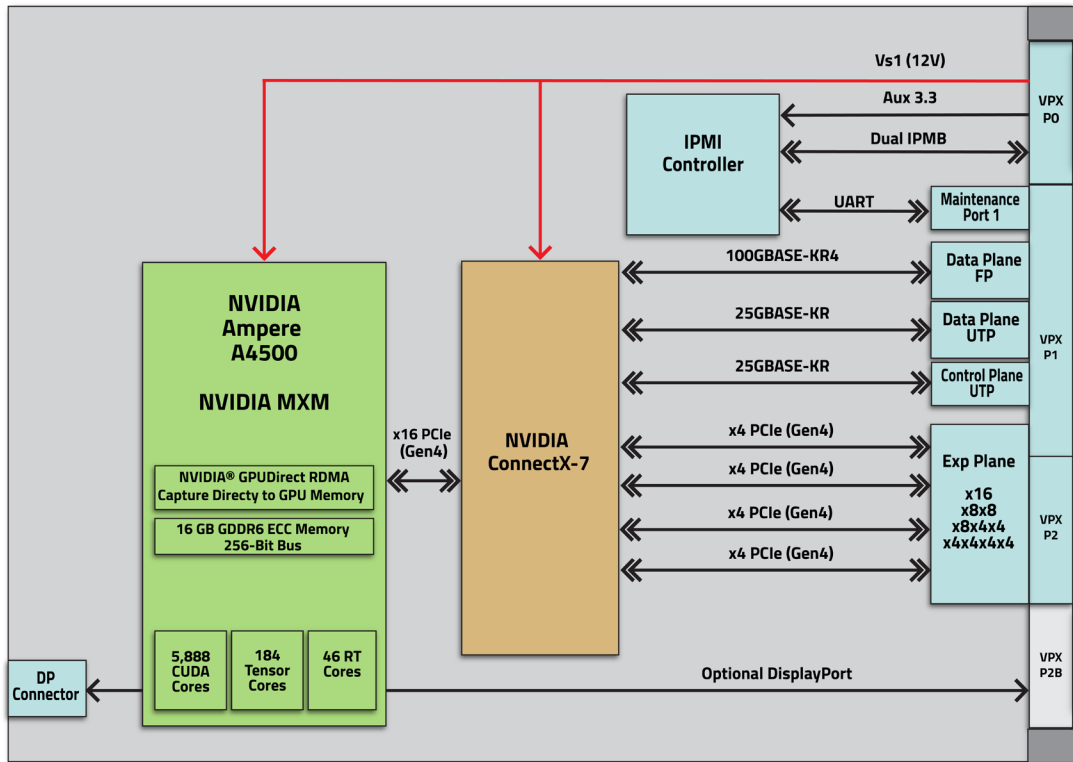
## Shock & Vibration (MIL-STD-810)

40 g ; 0.1 g<sup>2</sup>/Hz

## Humidity & (MIL-STD-810)

95% Without Condensation

# Condor GR2S-A4500-ETH Block Diagram



## SOSA-aligned Payload:

Slot Profile : SLT3-PAY-1F1U1S1S1U1U2F1H-14.6.11-0 (P2 Fully De-Populated)  
SLT3-PAY-1F1U1S1S1U1U4F1J-14.6.13-0 (P2B De-Populated)



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