

Rugged 3U VPX graphics & GPGPU card based on the NVIDIA Turing architecture using the NVIDIA Quadro RTX 5000 GPU with single-link DVI and DisplayPort++ outputs.



3U VPX GRAPHICS & GPGPU CARD

NVIDIA Quadro RTX 5000 GPU
(TU104); 3072 CUDA Cores;
384 Tensor Cores; 48 RT Cores;
9.39 TFLOPS FP32

RUGGED GPU

Based on MXM technology for
rugged GPU design;
MIL-STD-810 compliant

THREE VIDEO OUTPUTS

Two DisplayPort++ & one
single-link DVI-D or three
single-link DVI-D

3U VPX Graphics & GPGPU Card with Three Video Outputs

The Condor GR2-RTX5000 is a rugged 3U VPX form factor card based on NVIDIA® Turing™ architecture and the NVIDIA RTX™ platform. Based on MXM technology, this graphics and GPGPU card incorporates the most powerful GPU that is currently available in the rugged market. With exceptional performance in GPGPU computing, AI inferencing, deep learning, sensor processing, and data analytics, the card is ideal for ISR (Intelligence, Surveillance & Reconnaissance), EW (Electronic Warfare), DSP (Digital Signal Processing), DVE (Degraded Visual Environments), and Data Science applications.

The Condor GR2-RTX5000 meets strict data integrity requirements for mission-critical applications with uncompromised computing accuracy and reliability. The 3072 CUDA® parallel processing cores in the NVIDIA Turing™ architecture offer a multitude of capabilities such as mesh shading, variable rate shading, texture space shading, multi-view rendering, and ultra-high performance GPGPU computing. The GPUDirect® RDMA implementation offers fast data transfer/communication from connected hardware, such as FPGAs, and switches directly into GPU memory, avoiding unnecessary memory copies and CPU overhead resulting in minimal latency. With 384 Tensor cores and 48 RT cores, the Condor GR2-RTX5000 delivers high AI inferencing performance. Multiple precision modes such as FP64, FP32, FP16, INT8, INT4, and INT1, enables up to 32X throughput compared to previous generations and even offers features like AI de-noising. The Condor GR2-RTX5000 delivers real-time performance for encoding applications with dedicated H.265 and H.264 encode and decode engines.



MIL-STD 810
Shock



MIL-STD 810
Temperature



MIL-STD 810
Vibration



SWaP

Condor GR2-RTX5000 Specifications

Graphics Processor	NVIDIA Quadro RTX 5000 GPU (TU104 Turing Architecture) Supporting DirectX 12, OpenGL 4.5, and Vulkan 1.2
Interface	3U VPX Form Factor 1" Pitch (Conduction Cooled) 1" Pitch (Air Cooled)
Graphics Memory	16 GB GDDR6 256-bit Memory Interface 448 GB/s Memory Bandwidth
Video Outputs	Two DisplayPort++ & one single-link DVI-D OR Three Single-Link DVI-D (DisplayPort Can Be Converted to DVI or VGA With Adapters)
GPGPU Capabilities	3072 CUDA Cores. 384 Tensor Cores. 48 RT Cores. Up to 9.49 TFLOPS FP32 Single Floating Point Performance Supports CUDA 11 (Compute Capability 7.5) and CUDA-X OpenCL 3.0 and Shader Model 5.1 H.265 (HEVC) / H.264 (MPEG4/AVC) Hardware Encode & Decode NVIDIA GPUDirect® RDMA, NVENC, NVDEC
Power Consumption	110 W
Operating Temperature (MIL-STD-810)	-40°C to 70°C (Rugged Air Cooled) -40°C to 85°C (Rugged Conduction Cooled) Please refer to the Hardware User Guide for details on temperature/performance characterization.
Vibration (MIL-STD-810)	0.1 g ² /Hz
Shock (MIL-STD-810)	40 g
Humidity (MIL-STD-810)	95% Without Condensation

Condor GR2-RTX5000 Block Diagram

