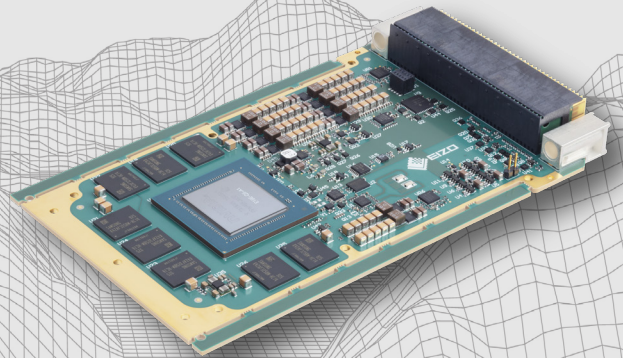3U VPX graphics & GPGPU card based on NVIDIA Turing architecture using the NVIDIA Quadro RTX 5000 GPU; supports DisplayPort & Single-Link DVI outputs.

NVIDIA. QUADRO RTX™

3U VPX GRAPHICS & GPGPU CARD

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

ACTIVE THERMAL DISSIPATION

Designed with exclusive thermal technology and a chip-down GPU for full ruggedization

FOUR VIDEO OUTPUTS

Four DisplayPort; four Single-Link DVI; or two DisplayPort & two Single-Link DVI

3U VPX Graphics & GPGPU Card Based on NVIDIA Turing

The Condor GR5-RTX5000 is a rugged 3U VPX form factor card based on NVIDIA® Turing™ architecture and the NVIDIA RTX™ platform. This highly integrated "chip-down" 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. It is available as conduction cooled and air cooled.

The Condor GR5-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 GR5-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 GR5-RTX5000 delivers real-time performance for encoding applications with dedicated H.265 and H.264 encode and decode engines. It is available in both SOSA and VITA standards and has multiple I/O configurations.

MIL-STD 810 Shock

MIL-STD 810 Temperature

MIL-STD 810 Vibration

SWaP

Condor GR5-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 0.8" 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 & Two Single-Link DVI-D OR Four Single-Link DVI-D OR Four DisplayPort
GPGPU Capabilities	3072 CUDA Cores. 384 Tensor Cores. 48 RT Cores. Up to 9.49 TFLOPS FP32 Single Floating Point Performance Supports CUDA 10 (Compute Capability 7.5) and CUDA-X OpenCL 1.2 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
Software & Platform Support	Windows or Linux on x86 VPX & PCIe

Condor GR5-RTX5000 Block Diagram

EIZO Rugged Solutions