



Condor GR3 3U VPX



Rugged 3U VPX GPGPU / SBC Solution with CUDA Support

The Condor GR3 3U VPX is a rugged conduction cooled 3U VPX GPGPU Solution designed for SWaP (Size Weight Power) constrained applications. It hosts a GPU module and has an XMC site for interfacing with an XMC Single Board Computer (SBC). The board is designed to be a highly efficient GPGPU solution taking up a single 3U VPX slot. It can host either an NVIDIA® GeForce® GTX 1050 Ti GPU based on the NVIDIA® Pascal™ GPU architecture with 768 CUDA® cores, 4GB GDDR5 and 2.29 TFLOPs of floating-point performance or an NVIDIA® GeForce® GTX 1050 Ti based on the NVIDIA® Maxwell™ GPU architecture with 640 CUDA® cores, 4GB GDDR5 and 1.271 TFLOPs. Currently there are three SBC options. One is a 5th generation Intel i7 for customers demanding higher performance (GR3-X7). The second SBC option is a 6th generation Intel i3 for customers that need a lower power solution (GR3-C3). The third SBC option is an Intel Xeon E3-1505L v5 (GR3-CX).

Normally an XMC graphics board plugs into a 3U VPX SBC, but the XMC form factor is limiting to GPGPU performance because of size, power limitations and cooling issues. By using an XMC based SBC on the GR3, a more powerful GPU can be used and the single slot 3U VPX solution becomes easier to cool.

The 3U VPX form factor has a higher power availability as compared to an XMC solution and hence offers higher performance. It also offers very high GPGPU performance using either CUDA® 6.1 or OpenCL™ 1.2.

One DVI, one VGA and one DisplayPort++ video output are available from the rear VPX P1/P2 connectors. An XMC site on the 3U VPX board can host an XMC Single Board Computer that complies to VITA 42.3 for PCIe. Two 1Gbps Ethernet, two USB 2.0, two RS-232, two SATA, 8 lane PCIe and other signals from the SBC are routed to the rear VPX connectors. The board can consume up to 50W based on the application (not including the hosted XMC SBC).

The Condor GR3 3U VPX GPGPU solution is ideal for a variety of compute intensive applications. The board is designed to be modular to allow for graphics performance upgrades in the future. Many customizations are possible such as different video outputs from the rear VPX connectors or a front I/O configuration. Please contact EIZO Rugged Solutions for more information. This product is designed to withstand high temperature, shock and vibration environments. The board meets MIL-STD-810G standards.

EIZO Rugged Solutions is a pioneer in providing video, graphics, encoding and recording solutions for nearly three decades. Responsiveness has been the key to our success. Product customizations or new designs can be developed in a short time to meet your needs. The product comes with EIZO Rugged Solutions' long term commitment of availability and support.

Key Features

- 3U VPX form factor (conduction cooled)
- Designed for SWaP constrained applications
- NVIDIA® Pascal™ or NVIDIA® Maxwell™ GPU
- GPUs: GTX 1050 Ti or GTX 950M,
- XMC site for hosting an XMC form factor computer
- GR3-C3 : 6th generation Intel® Core™ i3-6102E
- GR3-X7 : 5th generation Intel® Core™ i7-5700EQ
- GR3-CX : Intel® Xeon™ E3-1505L v5
- Supports NVIDIA® CUDA® 6.1 and OpenCL™ 1.2
- GTX 1050 Ti: 768 cores, 2.29 TFLOPs, 4GB GDDR5
- GTX 950M: 640 cores, 1.271 TFLOPs, 4GB GDDR5
- DirectX® 12 & OpenGL® 4.6
- 8 or 4 Lane PCI Express 2.0
- DVI, VGA and DisplayPort outputs on VPX P1/P2
- Two 1Gbps Ethernet, Two USB 2.0, Two RS-232 and Two SATA
- Long term product availability
- Ideal for rugged applications

Condor GR3 3U VPX Specifications

Form Factor	3U VPX. Conduction Cooled
Graphics Processor	NVIDIA® Pascal™ or NVIDIA® Maxwell™ GPU Architecture NVIDIA GeForce GTX 1050 Ti or GTX 950M
Graphics Memory & Bandwidth	GTX 1050 Ti: 4GB GDDR5, 112 GB/sec GTX 950M: 4GB GDDR5, 80 GB/sec
DirectX / OpenGL Support	DirectX 12, OpenGL 4.6
OpenCL™ / CUDA™ (GPGPU computing)	CUDA 6.1, OpenCL™ 1.2, CUDA™ C, CUDA™ C++ 768 (1050 Ti) or 640 (950M) CUDA cores 2.29 TFLOPs (1050 Ti), 1.271 TFLOPs (950M) floating-point performance
CPU Interface	Support for XMC based Single Board Computers following VITA 42.3 for x8 PCIe
CPU Options (XMC based Single Board Computer)	GR3-C3 : 2-core 6 th generation 1.9 GHz Intel® Core™ i3-6102E (25W). Up to 16GB DDR4. 64GB soldered Micro SSD <hr/> GR3-X7 : 5th generation 2.4 GHz Intel® Core™ i7-5700EQ (40W). Up to 8GB DDR3L-1600 ECC SDRAM. Up to 32GB NAND flash <hr/> GR3-CX: 4-core 2.0 GHz Intel® Xeon® E3-1505L v5 (25W). 16GB soldered DDR4 ECC DRAM, 64 GB soldered Micro SSD
I/O Interfaces	8 lane PCIe 2.0, 1.0 XMC Site for hosting an XMC Single Board Computer Two 1Gbps Ethernet, Two RS-232, Two USB 2.0, Two SATA
Video Outputs (Rear VPX)	One DVI, One VGA and One DisplayPort++
Maximum Video Output Resolution	1920x1200@60 (VGA, DVI), 4K UHD (DisplayPort)
Power Rating	60W(1050 Ti), 50W (950M) (not including XMC based Single Board Computer)
Operating Temperature	-40°C to 85°C (Rugged Conduction Cooled)
Non-operating Temperature	-55°C to 105°C
Vibration (MIL-STD-810G)	0.1 g ² /Hz (15-2K Hz)
Shock (MIL-STD-810G)	40g peak
Conformal Coating	Included
Humidity	95% without condensation
Software/Platform Support	Windows or Linux

Bringing your projects to life®



EIZO Rugged Solutions
Formerly Tech Source

11/21/2017 Rev B

EIZO Rugged Solutions

442 Northlake Blvd
Altamonte Springs, FL 32701, USA
407.262.7100

Website: www.eizorugged.com Email: condor@eizo.com

EIZO Rugged Solutions Inc, Condor and the EIZO Rugged Solutions logo are trademarks of EIZO Corporation.
EIZO name and logo are registered trademarks of EIZO Corporation. All other trademarks are the property of their respective owners.
©2017 EIZO Rugged Solutions. All rights reserved. Information in this document is subject to change without notice.
EIZO Rugged Solutions assumes no responsibility for errors or omissions that may appear in this document.