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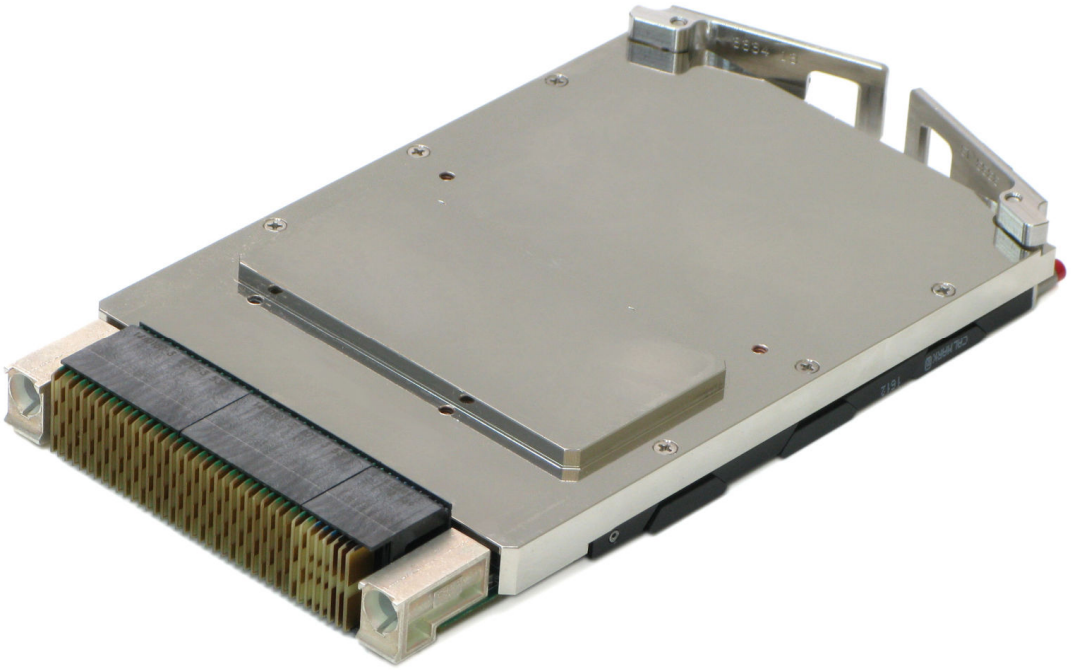
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Find the *Aitech Defense Systems C530* at our website: ***Click HERE***

C530

GPGPU 3U VPX Board

Aitech
Embedded Computing *without* Compromise



- Rugged 3U VPX Form Factor
- NVIDIA® GeForce® GTX 965M MXM GPU
  - Maxwell Architecture
  - 1892 GFLOPS
  - 1024 CUDA Cores @ 950 MHz
  - 4 GB GDDR5 @ 1600 MHz
  - CUDA, PhysX, OpenCL, OpenGL, DirectX 12
  - < 5 W Idle, 50 W Max Power
- Multiple Video Output Channels
- PCIe x8 Gen2 Host Interface
- OpenVPX Compliant
- Windows®, Linux® Support
- 2LM Option per VITA 48.2
- Conduction and Air-Cooled Versions
- Vibration and Shock Resistant



C530

GPGPU 3U VPX Board

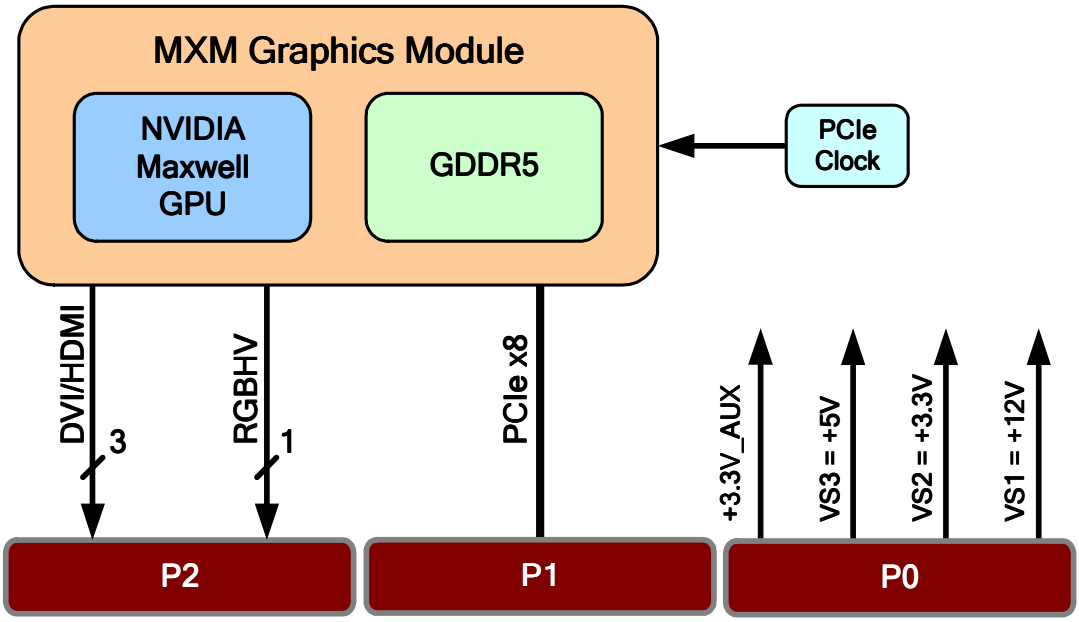
Aitech
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The parallel processing capabilities of today's multi-core GPUs make them ideal for many computationally intensive non-graphics applications. Aitech's C530 General Purpose GPU (GPGPU) board provides these capabilities, as well as high-performance graphics rendering capabilities and multiple video output channels, in a rugged 3U VPX form factor.

In addition to the increased throughput offered by parallel processing, GPGPU computing also allows the CPU and OS to remain responsive even when the system is under a heavy load, by offloading the intensive operations to the GPU. GPGPU application development can be performed on a standard PC that is equipped with a GPU of the same architecture.

The C530 hosts an MXM GPU module (standardized GPU form factor), and new configurations of the C530 are released as higher-performance MXMs become available. The C530 currently supports the NVIDIA GeForce GTX 965M, which offers improved performance and reduced power consumption compared to the NVIDIA GeForce GTX 770M (also available but not recommended for new designs).

The C530 operates as a peripheral board with a compatible x86 VPX host SBC, such as Aitech's C873 (4th Gen. Intel® Core™ i7) and C874 (5th Gen. Intel® Core™ i7) 3U VPX SBCs. The C530 and the host SBC interconnect over the VPX backplane, via a high speed PCIe Gen2 link of up to 8 lanes.



Board Architecture

MXM Site	Supports a single MXM 3.0/3.1 Type B module
MXM GPU	NVIDIA® GeForce® GTX 965M • Maxwell Architecture • GM204 Graphics Processor • 1892 GFLOPS • 1024 CUDA Cores • 950 MHz GPU Clock • 4 GB GDDR5 @ 1600 MHz • 128-bit Memory Interface Width • OpenGL 4.5 • OpenCL 1.1 • DirectX 12, Shader 5.0 • CUDA, PhysX • < 5 W Idle, 50 W Max Power • Optimus Technology • Dynamic clock frequency scaling support
PCIe Interface	• PCIe x8 Gen2 port for connection to host SBC over the VPX backplane • 100 MHz PCIe reference clock generated on-board • Signals mapped to P1 connector per VITA 46.4
OpenVPX (VITA 65) Slot Profiles	The PCIe interface supports the following OpenVPX peripheral slot profiles • SLT3-PER-1F (1 Fat pipe) • SLT3-PER-1U (1 Ultra-thin pipe)

C530

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Video Outputs

	Number of Ports	Supported Resolutions	Remarks
DVI (single-link)/HDMI	3	DVI: up to 1600x1200 @ 60 Hz, HDMI: up to 1920x1080 @ 60 Hz	Up to two output ports can be active simultaneously
RGBHV	1	Up to 1600x1200 @ 60 Hz	

Software

Operating System Support	Windows and Linux
Drivers	Supported by standard NVIDIA driver packages
GPGPU Development Tools	NVIDIA's CUDA toolkit supports GPGPU application development

Mechanical

	Form Factor & Dimensions (1)	Weight
Air-Cooled	3U VPX REDI per ANSI/VITA 48.1	< 850 g (1.9 lbs)
Conduction-Cooled	3U VPX REDI per ANSI/VITA 48.2	< 800 g (1.8 lbs)
Conduction-Cooled 2LM	3U VPX REDI 2LM (Two Level Maintenance) per ANSI/VITA 48.2	< 850 g (1.9 lbs)

Notes: (1) Pitch per ordering information

Performance and Power

C530 MXM	Clocks [MHz]		3DMark 11					Power Consumption
	GPU	Memory	Test Type	Graphics	Physics	Combined	Overall	
NVIDIA GeForce GTX 965M	950	1600	Entry (1024x600)	11203	6442	6071	E9090	48 W
			Performance (1280x720)	6511	6455	5152	P6335	
			Extreme (1920x1080)	1919	6616	2139	X2088	

Notes: Required backplane power supplies (and recommended minimum capacities) for the NVIDIA GeForce GTX 965M based version of the C530 are: +5V (0.5 A), +3.3V (1 A), +12V (4.5 A), +3.3V_AUX (0.1 A)
Test platform: PCIe Gen2 x8 connection to Intel Core i7-4700EQ host SBC, Windows 7 64-bit OS

Environmental

Specs per VITA 47	Air-Cooled			Conduction-Cooled	
	Commercial	Rugged	Military	Rugged	Military
Operating Temp.	AC1 (0 to +55 °C) (2)	AC3 (-40 to +70 °C) (2)	AC4 (-40 to +85 °C) (1,2)	CC3 (-40 to +70 °C) (3)	CC4 (-40 to +85 °C) (1,3)
Non-Operating Temp.	C1 (-40 to +85 °C)	C3 (-50 to +100 °C)	C4 (-55 to +125 °C)	C3 (-50 to +100 °C)	C4 (-55 to +125 °C)
Vibration	V1	V2	V2	V3	V3
Operating Shock	OS1	OS1	OS1	OS2	OS2
Altitude	15,000 ft.	35,000 ft.	70,000 ft.	35,000 ft.	70,000 ft.
Relative Humidity (4)	0 - 90%	0 - 95% with Acrylic (Standard),			
Conformal Coating	N/A	0 - 100% with Urethane (Optional)			

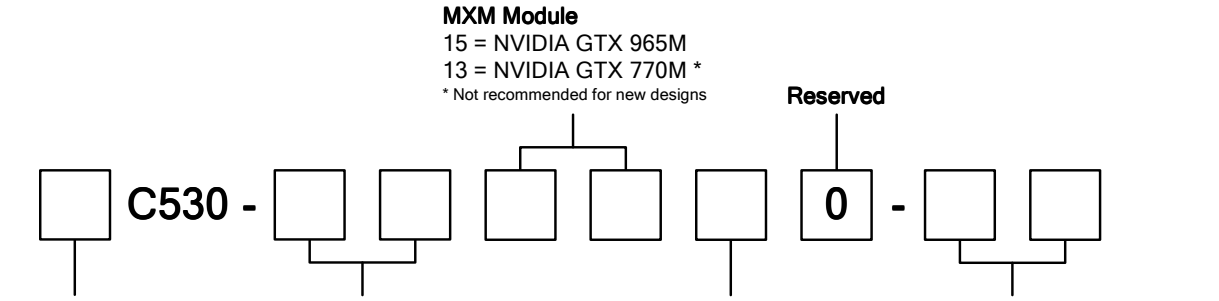
Notes: (1) -55 °C available, contact an Aitech representative for more information
(2) Operating ambient air temperature (with sufficient airflow)
(3) Operating card edge temperature
(4) Non-condensing

C530

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Ordering Information



Example: 4C530-R01510-00

Optional Accessories

TM530	Rear Transition Module (RTM) providing convenient access to C530 I/O interfaces via standard connectors. Supports both air and conduction-cooled C530 mounted in commercial air-cooled chassis. Refer to the TM530 datasheet for further information.

Contact Aitech

Contact your Aitech sales representative for additional product information, and for inquiries regarding customized configurations of the C530 and additional software support.



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