

3U VPX GPGPU Blade with NVIDIA RTX™
 ADA5000 or ADA2000

Datasheet

VPX3-XXM Series



Features

- NVIDIA® RTX™ ADA5000 or ADA2000 embedded graphics based on Ada Lovelace architecture
- Up to 9278 CUDA cores, 42.6 TFLOPS peak FP32 performance (RTX™ ADA5000 SKU)
- Native PCIe Gen4 interface
- PCIe lanes configurable by PCIe switch
- 1x DisplayPort 1.4a (SKU option)
- Additional ports from SBC for expansion (SKU option): 2x USB3.2 Gen1x1, 1x USB2.0, and 1x RS-232
- VITA 46/48/65 compliant for quick deployment
- SOSA-aligned

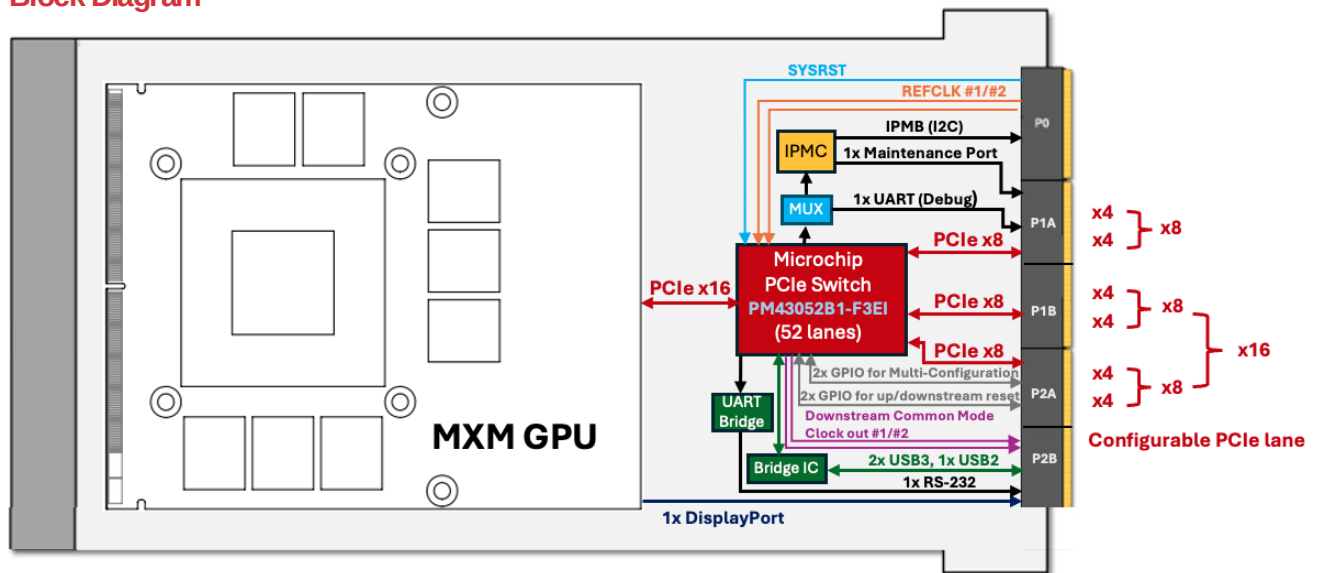
Specifications

Core Design	Architecture	3U VPX carrier board with one MXM slot
	VITA standards	VITA 46/48/65 compliant SOSA aligned
Connectivity	Slot Profile	SLT3-PAY-2F2U-14.2.3 SLT3-PAY-1F1U1S1S1U1U4F1J-14.6.13-0, P2B de-populated SLT3-PAY-1F1U1S1S1U1U2F1H-14.6.11-0, P2 fully de-populated
	PCI Express	One PCIe Gen4 x8 to P1A, configurable as two PCIe x4 One PCIe Gen4 x8 to P1B, configurable as two PCIe x4 One PCIe Gen4 x8 to P2A (SKU option), configurable as two PCIe x4 Two of PCIe Gen4 x8 (P1B + P2A) can be configured to one PCIe x16
Video Output	USB	One DisplayPort 1.4a output to P2B (SKU option) Two USB3.2 Gen 1x1 from SBC to P2B via PCIe switch (SKU option)
	COM	One USB2.0 from SBC to P2B via PCIe switch (SKU option)
	GPIO	One RS-232 from SBC to P2B via PCIe switch (SKU option)
	Others	Two GPIO to P2A for multi-configuration (SKU option) Two GPIO to P2A for upstream/downstream rest (SKU option) One maintenance port (default RS-232) One UART from PCIe switch to P1A directly for debug usage (BOM option)
Power Requirement	Power Input	12V (VS1/VS2) 3.3V_AUX only
	Operating System	Windows 10/11 64-bit Linux Support by request
Miscellaneous	LED	Status LED
	Reset Button	Board reset button on front panel
Mechanical	Form Factor	3U VPX, conduction-cooled construction, 1" pitch (VITA 48.2)
	Thermal Dissipation	Conduction-cooling by wedge locks

Specifications

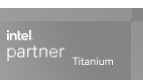
Environmental	Operating Temp.	-40°C to +85°C at wedge locks (VITA47.0, ECC4-CC4)
	Storage Temp.	-55°C to +100°C
	Vibration	Random: 12Grms, 5Hz to 2000Hz (VITA47.0, ECC4-V3) Sinusoidal: 5g, 20Hz to 2000Hz
	Shock	40g, 11ms (VITA47.0, ECC4-OS2)
	Relative Humidity	95% non-condensing
	Altitude	60,000 feet. (operating)
	EMC	CE (EN555032 / EN55035); FCC Part 15B Class A

Block Diagram



Models

		VPX3-XXMM/AD5000	VPX3-XXMM/AD2000
Graphic Core	GPU	NVIDIA RTX™ 5000 ADA	NVIDIA RTX™ 2000 ADA
	Memory	16GB GDDR6 memory Bandwidth: 576GB/s	8GB GDDR6 memory Bandwidth: 256GB/s
GPGPU Computing	CUDA Cores	9278 CUDA cores 42.6 TFLOPS peak FP32 performance	3072 CUDA cores 14.5 TFLOPS peak FP32 performance
	Tensor Cores	304 Tensor Cores	96 Tensor Cores
	RT Cores	76 RT Cores	24 RT Cores
	Compute API	CUDA Tool Kit 8.0 and above	
	Graphics API	CUDA Compute version 8 and above, OpenCL™ 1.2 DirectX® 12, OpenGL 4.6	
		Graphics API	



Ordering Information

With P2 Connector, SOSA-aligned payload: SLT3-PAY-2F2U-14.2.3

VPX3-XMXM/AD5000, COMM	3U VPX GPGPU blade with MXM RTX 5000 ADA, SOSA aligned, conformal coating & ETT, -40 to +85°C, conduction-cooled, with 3x PCIe x8, 1x DP, 2x USB3.0, 1x USB2.0, and 1x RS-232, supports common PCIe clock mode
VPX3-XMXM/AD5000, non-COMM	3U VPX GPGPU blade with MXM RTX 5000 ADA, SOSA aligned, conformal coating & ETT, -40 to +85°C, conduction-cooled, with 3x PCIe x8, 1x DP, 2x USB3.0, 1x USB2.0, and 1x RS-232, supports non-common PCIe clock mode
VPX3-XMXM/AD2000, COMM	3U VPX GPGPU blade with MXM RTX 2000 ADA, SOSA aligned, conformal coating & ETT, -40 to +85°C, conduction-cooled, with 3x PCIe x8, 1x DP, 2x USB3.0, 1x USB2.0, and 1x RS-232, supports common PCIe clock mode
VPX3-XMXM/AD2000, non-COMM	3U VPX GPGPU blade with MXM RTX 2000 ADA, SOSA aligned, conformal coating & ETT, -40 to +85°C, conduction-cooled, with 3x PCIe x8, 1x DP, 2x USB3.0, 1x USB2.0, and 1x RS-232, supports non-common PCIe clock mode

P2B de-populated, SOSA-aligned payload: SLT3-PAY-1F1U1S1S1U1U4F1J-14.6.13-0

VPX3-XMXM/AD5000, w/o P2B, COMM	3U VPX GPGPU blade with MXM RTX 5000 ADA, SOSA aligned, conformal coating & ETT, -40 to +85°C, conduction-cooled, with 3x PCIe x8, supports common PCIe clock mode, P2B de-populated
VPX3-XMXM/AD5000, w/o P2B, non-COMM	3U VPX GPGPU blade with MXM RTX 5000 ADA, SOSA aligned, conformal coating & ETT, -40 to +85°C, conduction-cooled, with 3x PCIe x8, supports non-common PCIe clock mode, P2B de-populated
VPX3-XMXM/AD2000, w/o, P2B, COMM	3U VPX GPGPU blade with MXM RTX 2000 ADA, SOSA aligned, conformal coating & ETT, -40 to +85°C, conduction-cooled, with 3x PCIe x8, supports common PCIe clock mode, P2B de-populated
VPX3-XMXM/AD2000, w/o P2B, non-COMM	3U VPX GPGPU blade with MXM RTX 2000 ADA, SOSA aligned, conformal coating & ETT, -40 to +85°C, conduction-cooled, with 3x PCIe x8, supports non-common PCIe clock mode, P2B de-populated

P2 fully de-populated, SOSA-aligned payload: SLT3-PAY-1F1U1S1S1U1U2F1H-14.6.11-0

VPX3-XMXM/AD5000, w/o P2, COMM	3U VPX GPGPU blade with MXM RTX 5000 ADA, SOSA aligned, conformal coating & ETT, -40 to +85°C, conduction-cooled, with 2x PCIe x8, supports common PCIe clock mode, P2 fully de-populated
VPX3-XMXM/AD5000, w/o P2, non-COMM	3U VPX GPGPU blade with MXM RTX 5000 ADA, SOSA aligned, conformal coating & ETT, -40 to +85°C, conduction-cooled, with 2x PCIe x8, supports non-common PCIe clock mode, P2 fully de-populated
VPX3-XMXM/AD2000, w/o P2, COMM	3U VPX GPGPU blade with MXM RTX 2000 ADA, SOSA aligned, conformal coating & ETT, -40 to +85°C, conduction-cooled, with 2x PCIe x8, supports common PCIe clock mode, P2 fully de-populated
VPX3-XMXM/AD2000, w/o P2, non-COMM	3U VPX GPGPU blade with MXM RTX 2000 ADA, SOSA aligned, conformal coating & ETT, -40 to +85°C, conduction-cooled, with 2x PCIe x8, supports non-common PCIe clock mode, P2 fully de-populated

