NVIDIA
PROFESSIONAL
GRAPHICS
SOLUTIONS

PNY®

Professional Solutions

NVIDIA.

WHICH PNY PROFESSIONAL BOARD IS RIGHT FOR YOU ?

NVIDIA QUADRO for Desktop Workstations

	Part Numbers	NVIDIA CUDA[1] Processing cores	GPU Memory	Memory Bandwidth	Floating-Point Performance (GigaFlops, Peak)	Error Correcting Code (ECC) Memory	Dual-Link DVI[2]	DisplayPort[1,2,3]	Maximum Active Displays[4]	Maximum Resolution Support @ 60 Hz	FSAA (Maximum)	NVIDIA FXAA Antialiasing	NVIDIA TXAA Antialiasing	NVIDIA Quadro Mosaic Technology	Maximum Power Consumption	H.264 and HEVC Encode/Decode Engines	Vulkan Support	GPUDirect for Video	Graphics Synchronization[5]	Quadro NVLink Bridge support	Quadro SLI HB Bridge support
Quadro GV100 (NEW)	VCQGV100-PB	5 120	32 GB	870 GB/s	7 400 DP 14 800 SP	√[8]	-	4	4	5120x2880	64x	√	√	√	235W	√	√	√	√	√	-
Quadro GP100	VCQGP100-PB	3 584	16 GB	732 GB/s	5 200 DP 10 300 SP	√[8]	1	4	4	5120x2880	64x	√	√	√	235W	√	√	√	√	√	-
Quadro P6000	VCQP6000-PB	3 840	24 GB	433 GB/s	12 000 SP	√[7]	1	4	4	5120x2880	64x	√	√	√	250W	√	√	√	√		√
Quadro P5000	VCQP5000-PB	2 560	16 GB	288 GB/s	8 900 SP	√[7]	1	4	4	5120x2880	64x	√	√	√	180W	√	√	√	√		√
Quadro P4000	VCQP4000-PB	1 792	8 GB	243 GB/s	5 300 SP	√[7]	-	4	4	5120x2880	64x	√	√	√	105W	√	√	√	√		√
Quadro P2000	VCQP2000-PB	1 024	5 GB	192 GB/s	3 000 SP		-	4	4	5120x2880	64x	√	√	√	75W	√	√		√		
Quadro P1000	VCQP1000-PB VCQP1000DVI-PB	640	4 GB	80 GB/s	1 894 SP		-	4	4	5120x2880	64x	√	√	√	47W	√	√				
Quadro P620 (NEW)	VCQP620-PB VCQP620DVI-PB	512	2 GB	80 GB/s	1 386 SP		-	4	4	5120x2880	64x	√	√	√	40W	√	√				
Quadro P600	VCQP600-PB VCQP600DVI-PB	384	2 GB	64 GB/s	1 195 SP		-	4	4	5120x2880	64x	√	√	√	40W	√	√				
Quadro P400	VCQP400-PB VCQP400DVI-PB	256	2 GB	32 GB/s	641 SP		-	3	3[4]	5120x2880	64x	√	√	√	30W	√	√				

NVIDIA NVS for Desktop Workstations

	Part Numbers	NVIDIA CUDA[1] Processing cores	GPU Memory	Memory Bandwidth			Dual-Link DVI[2]	DisplayPort[1,2,3]	Maximum Active Displays[4]	Maximum Resolution Support @ 60 Hz					Maximum Power Consumption		Vulkan Support				
NVS 810	VCNVS810DP-PB VCNVS810DVI-PB	1024 512/GPU	4 GB 2 GB/GPU	28.8 GB/s			8[11]	8[10]	8	4096x2160[12]					68W		√				
NVS 510	VCNVS510DP-PB VCNVS510DVI-PB VCNVS510VGA-PB	192	2 GB	28.5 GB/s			4[11]	4[10]	4	3840x2160					35W		√				
NVS 315	VCNVS315DP-PB VCNVS315DVI-PB	48	1 GB	14 GB/s			2[11]	2[10]	2	2560x1600					19,5W		√				
NVS 310	VCNVS310DP-1GB-PB VCNVS310DVI-1GB-PB	48	1 GB	14 GB/s			2[11]	2	2	2560x1600					19,5W		√				

PNY PREVAILPRO Mobile Workstation

PNY PREVAILPRO P3000 BASE	**GPU**: NVIDIA Quadro P3000 6GB **CPU**: Intel® Core™ i7	**Display**: 15,6" UHD **Memory**: 16 GB DDR4	**SSD**: 256 GB M.2 PCIe **HDD**: 1 TB Hard Disk Drive	**Professional 3D Graphics** PNY PREVAILPRO integrates NVIDIA Quadro® P3000/P4000 to deliver desktop-level performance with great mobility, allowing visual computing professionals across various industries to work with large, complex designs, render photo-realistic imagery, and develop intricate and life-like VR experiences.	**VR-Ready** PNY PREVAILPRO Mobile Workstation with NVIDIA Quadro® P4000 is VR-ready and has the performance required for professional VR workloads. From geometry to textures, panoramas to light fields. NVIDIA Quadro is the de facto standard for VR acceleration and streamlining.
PNY PREVAILPRO P3000 UPGRADED PRO	**GPU**: NVIDIA Quadro P3000 6GB **CPU**: Intel® Core™ i7	**Display**: 15,6" UHD **Memory**: 32 GB DDR4	**SSD**: 512 GB M.2 PCIe **HDD**: 2 TB Hard Disk Drive		
PNY PREVAIL PRO P4000 UPGRADED PRO	GPU: NVIDIA Quadro P4000 8GB **CPU**: Intel® Core™ i7	**Display**: 15,6" UHD **Memory**: 32 GB DDR4	**SSD**: 512 GB M.2 PCIe **HDD**: 2 TB Hard Disk Drive		

1. CUDA parallel processing cores cannot be compared between GPU generations due to several important architectural differences that exist between designs.
2. Maximum display resolution: DVI-DL: 2560x1600 @ 60hz or 1920x1200@120Hz. DVI-SL: 1920 x 1200 @ 60Hz
3. Adapters available for DVI-SL, DVI-DL, HDMI, and VGA. NVS 315 offers DP1.2 through the use of DMS-59 to DP1.2/DP1.4 cable.
4. Option to connect a third and/or fourth display using DisplayPort 1.2's/1.4's multi-streaming capabilities. 4 Displays require a supported DisplayPort 1.2 Multi-Stream capable hub.
5. Quadro K-series and M-series GPUs are compatible with NVIDIA Quadro Sync. Quadro P-series and V-seriesis compatible with NVIDIA Quadro Sync II.
6. Requires 3D Vision-ready display. Visit www.nvidia.com/3dvision.
7. Ensures data integrity and reliability by eliminating soft errors on both GPU cache and on-board DRAM.

8. Ensures data integrity and reliability by eliminating soft errors on DRAM only.
9. The Single Precision theoretical peak performance is calculated for the highest GPU Boost level of 875MHz.
10. Using included adapters.
11. Using optional adapters.
12. 8 x 4096 x 2160 @ 30 HZ, 4 x 4096 x 2160 @ 60 Hz

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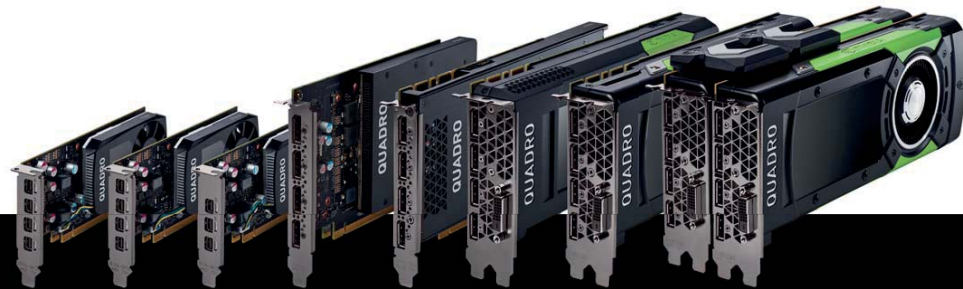## TESLA PLATFORM - BUILT FOR THE DATA CENTER

Delivered application performance is more than raw flops. Computational professionals depend on mission critical applications to accelerate discoveries and insights at scale. It starts with the world's fastest accelerators and includes a reliable infrastructure, the ability to monitor and manage that infrastructure, and the ability to quickly move data where it is needed. The NVIDIA Tesla Accelerated Computing Platform provides all of these to deliver unprecedented performance in scientific, analytics, engineering, consumer, and enterprise applications.

> **Differentiated Engineering**: Low Operating Voltage for Long Term Reliability. Large Guard-Band for Guaranteed Quality. Error Correction Code (ECC) for Data Integrity.

> **Extensive Qualification & Testing**: Long Burn-in-Testing. Zero Error Tolerance at Agressive Clocks. Result: 5% of GPUs screened out. Guaranteed Quality.

> **Enterprise Tools**: Simplyfy Data Center Operations. Manage and Monitor GPUs. System Diagnostics, GPU recovery, RMA diagnostics. GPU Cluster Managment.

QUADRO PLATFORM - MOST POWERFUL VISUAL COMPUTING

The term "professional workstation" implies many things to many people. However, it usually translates to expectations of high quality, excellent reliability, responsive support, and high performance. The Nvidia professional series is built to provide this high level of quality and reliability.

> **Performance**: Application specific feature development & tuning. Driver optimizations to maximize GPU features. Unique features to support pro workflows. IT tools for easy deployment & managment

> **Reliability**: Application specific testing by Nvidia. 100+ professional application certifications by ISVs. Unique rock-solid driver with deterministic release schedule. Designed and built by Nvidia to a single specification for 24/7 reliability & stability

> **Support**: Deep workflow experiance across vertical industries. Long-Life Cycle availability and support. Bulk availability for large Enterprise. Global technical pre-sales and post-sales support.

> **Quadro Application Value-add**: Solidworks Realview. 3ds Max Shade. Solidworks Visualize. PTC Creo OIT. Solidworks Ambient Occlusion. Catia Live Rendering.

> **Quadro Unique Features**: Large memory with ECC. nView Desktop Manager. GPUdirect for Video. Higher Level of FSAA (64x). Multi-GPU. Enterprise IT Tools. Iray Server Streaming. Quad Buffered Stereo. Mosaic. Warp & Blend. Bezel Correction & Overlap. Genlock & Framelock.

> **NVIDIA Iray GPU rendering**: Catia & Industrial Designer®. 3ds Max®. DAZ Studio®. Patchwork 3D®. Solidworks Visualizer®. Siemens NX®. SketchUp®. Substance Designer®. Revit®. Cinema 4D®. Maya®. Rhino®. Iray Server. More plug-in solutions coming.

Should I use a professional graphics card?

PNY offers a suite of professional solutions that enable designers, manufacturers, scientists and researchers to do their work smarter, faster, with greater reliability and with energy efficiency. If you answer one or more of the below questions with yes we recomend to use professional NVIDIA Quadro or Tesla cards.

> **DOES YOUR WORK INVOLVE CREATING, RENDERING, OR VISUALIZING DATA AND IMAGES?**: NVIDIA's professional cards are fully compatible, tested & certified on all your professional applications for more performance & reliability.

> **IS HARDWARE RELIABILITY IMPORTANT?**: Time spent troubleshooting is lost time for your creativity. NVIDIA® Quadro® graphics cards are designed for 24/7 operation with pro support.

> **DO YOU PREFER LONG AVAILABILITY FOR YOUR HARDWARE?:** Professional NVIDIA cards are usually available for 3 or more years while gaming cards often have a lifetime below 6 months.

Which NVIDIA Quadro for my application?

ENTRY	BASIC	MID-RANGE	UPPER-RANGE	HIGH-END	ULTRA HIGH-END
Quadro P620 Quadro P400	Quadro P2000 Quadro P1000	Quadro P4000	Quadro P5000	Quadro GV100 Quadro GP100 Quadro P6000	2 x GV100 or 2 x GP100 or 2x P6000
Microsoft Office		**Siemens** NX			
Trimble SketchUp		**PTC** Creo			
Adobe Illustrator CC Photoshop CC		After Effects CC, Premiere Pro CC			
Autodesk AutoCAD, Inventor, Revit			Maya, 3ds MAX		
	Dassault Systems Solidworks	CATIA			
			3DEXCITE CATIA Live Rendering	Solidworks Visualize	
				ABAQUS, SIMULA	
		The Foundry Mari, Nuke			
				Ansys Mechanical	
		Schlumberger Petrel			
Small/simple CAD models, Video, entry PLM • ISV Certs • Higher performance vs. IGP, gfx GPU • NVIDIA Mosaic	Medium size/complexity CAD models, basic DCC, Medical Imaging, PLM • +2GB memory • Approx. 118% faster	Large/complex CAD models, Advanced DCC, Medical Imaging • +4GB memory • Approx. 37% faster • NVIDIA Mosaic with sync	Large/complex CAD models, Seismic exploration, complex DCC effects • +8GB memory • Approx. 65% faster • Error Correcting Code (ECC) Memory	Largest CAD models, CAE, Photo-realistic rendering, Seismic exploration, GPGPU compute • +8GB memory • Approx. 61% faster	Most demanding rendering and GPGPU compute applications • Multi-GPU solution • Highest performance

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For a full list of recommendations please visit our

Quadro Online Configurator

at: http://pny.quadro-selector.com

NVIDIA QUADRO BY PNY

ULTRA HIGH-END

		PACKAGE CONTENT	IDEAL FOR
QUADRO GV100 VCQGV100-PB *NEW*		4 × DP to DVI (SL) adapters 1 × DP to HDMI adapter 1 × Driver & Quick Installation Guide 1 × Stereo Connector Bracket 1 × Dual 6-pin to 8-pin power cable	Artificial Intelligence Animation - Visualization Broadcast - Video Editing Oil & Gas Medical Imaging
QUADRO GP100 VCQGP100-PB		3 × DP to DVI (SL) adapters 1 × Driver & Quick Installation Guide 1 × Stereo Connector Bracket 1 x Dual 6-pin to 8-pin power cable	Animation - Visualization Broadcast - Video Editing Design Oil & Gas Medical Imaging
QUADRO P6000 VCQP6000-PB		3 × DP to DVI (SL) adapters 1 × Driver & Quick Installation Guide 1 × Stereo Connector Bracket 1 × Dual 6-pin to 8-pin power cable	Animation - Visualization Broadcast - Video Editing Design Oil & Gas Medical Imaging

HIGH-END

	PACKAGE CONTENT	IDEAL FOR
QUADRO P5000 VCQP5000-PB	3 × DP to DVI (SL) adapters 1 × Driver & Quick Installation Guide 1 × Stereo Connector Bracket 1 x Dual 6-pin to 8-pin power cable	Animation - Visualization Broadcast - Video Editing Design Manufacturing – large models Medical Imaging
QUADRO P4000 VCQP4000-PB	4 × DP to DVI (SL) adapters 1 × Driver & Quick Installation Guide 1 × Stereo Additional Connector	Animation - Visualization Broadcast - Video Editing Design Manufacturing – large models Medical Imaging

MID-RANGE

	PACKAGE CONTENT	IDEAL FOR
QUADRO P2000 VCQP2000-PB	4 × DP to DVI (SL) adapter 1 × Driver & Quick Installation Guide	Animation / Video Editing Manufacturing – med/large models Medical Imaging
QUADRO P1000 VCQP1000-PB VCQP100DVI-PB	4 × mDP to DP adapter[1] 1 × mDP to DVI (SL) adapter[1] 4 × mDP to DVI (SL) adapter[2] 1 × Driver & Quick Installation Guide 1 x attached ATX Bracket 1 x unattached LP Bracket	Animation Video Editing Manufacturing – medium models

ENTRY-LEVEL

		PACKAGE CONTENT	IDEAL FOR
QUADRO P620 VCQP600-PB VCQP600DVI-PB	*NEW*	4 × mDP to DP adapter[1] 1 × mDP to DVI (SL) adapter[1] 4 × mDP to DVI (SL) adapter[2] 1 × Attached ATX Bracket 1 × Unattached LP Bracket 1 × Driver & Quick Installation Guide	Video Editing Manufacturing – small / medium models
QUADRO P400 VCQP400-PB VCQP400DVI-PB		3 × mDP to DP adapter[1] 1 × mDP to DVI (SL) adapter[1] 3 × mDP to DVI (SL) adapter[2] 1 × Attached LP Bracket 1 × Unattached ATX Bracket 1 × Driver & Quick Installation Guide	Manufacturing – volume CAD

[1] only included with VCQP1000, VCQP520, VCQP400
[2] only included with VCQP1000DVI, VCQP600DVI, VCQP400DVI

NVIDIA TESLA BY PNY

HIGH-PERFORMANCE COMPUTING

TESLA V100 TCSV100M-32GB-PB TESLA V100 TCSV100MPCIE-PB	- Server	SP Peak Performance: 9.3 Tflops DP Peak Performance: 4.7 Tflops	
TESLA P100 TCSP100M-12GB-PB TESLA P100 TCSP100M-16GB-PB	- Server	SP Peak Performance: 12 Tflops	
TESLA P40 TCSP40M-PB	- Server	SP Peak Performance: 6.80 Tflops	
TESLA P6 TCSCP6-KIT	- Blade-Server	SP Peak Performance: 12 Tflops	
TESLA P4 TCSP4M-PB	- Server	SP Peak Performance: 5.5 Tflops Power consumption 50W/75W	

VIRTUALIZED GRAPHICS

TESLA M60 TCSM60M-R2L-PB TCSM60M-L2R-PB	Virtual Desktop Integration	Designer / Engineer / Power User
TESLA M10 TCSM10M-PB	Virtual Desktop Integration	Office Workers

NVIDIA NVS BY PNY

MULTI-DISPLAY BUSINESS GRAPHICS

NVS 810 VCNVS810DP-PB VCNVS810DVI-PB	Octa-Display	Financial Trading
NVS 510 VCNVS510DP-PB VCNVS510DVI-PB VCNVS510VGA-PB	Quad-Display	Digital Signage Call Center
NVS 315 VCNVS315DP-PB VCNVS315DVI-PB	Dual-Display	General Productivity Applications
NVS 310 VCNVS310DP-1GB-PB VCNVS310DVI-1GB-PB	Dual-Display	Upgrade From Integrated Graphics

PNY ADVANTAGE

PNY PROVIDES UNSURPASSED SERVICE AND COMMITMENT TO ITS PROFESSIONAL GRAPHICS CUSTOMERS

> 3 Year standard warranty
> Pre-sales support and system configuration assistance
> Dedicated Field Application engineers
> Direct tech support hot lines
> Support escalation for prompt issue resolution
> Certified software support and bug reporting
> Published product support and training materials
> Advanced replacement options for mission-critical deployments
> Long product life cycles and availability
> Loyalty partner channel programs

COMPATIBILITY & SUPPORT FOR ALL WORKSTATION BRANDS

PNY WARRANTY EXTENSION SERVICE

> To better protect your investment, PNY offers a comprehensive extended 5 Year warranty to your NVIDIA QUADRO, NVS, TESLA or GRID card from PNY.

Main features:

> **Additional 2 Year Extended Warranty Service** for your NVIDIA card by PNY
> **Advanced Product Replacement** *(for European Union countries, Norway and Switzerland)*

CONTACT

PNY Technologies Europe

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Zac du Phare
9 rue Joseph Cugnot - BP40181
33708 Mérignac Cedex
France
Tel: +33 (0)5 56 13 75 75
Fax: +33 (0)5 56 13 75 76
sales@pny.eu

PNY Technologies Quadro GmbH

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Schumanstraße 18a
52146 Würselen

Germany
Tel: +49 (0)2405/40848-0
Fax: +49 (0)2405/40848-99
vertrieb@pny.eu

PNY Technologies LTD

....

400 Capability Green
Luton
LU1 3AE
United Kingdom

quadrouk@pny.eu

www.pny.eu