

NVIDIA Professional Graphics Solutions

NVIDIA professional laptop GPUs power the world's most advanced thin and portable mobile workstations and unique compact devices to meet the visual computing needs of professionals across a wide range of industries. The latest generation of NVIDIA RTX™ professional laptop GPUs, built on the NVIDIA Ada Lovelace architecture, combine the latest advancements in real-time ray tracing, advanced shading, and AI-based capabilities to tackle the most demanding design and visualization workflows on the go. With the latest graphics technology, enhanced performance, and added compute power, NVIDIA professional laptop GPUs give designers, scientists, and artists the tools they need to work efficiently from anywhere.



GPU Specifications											Performance		Options			
NVIDIA CUDA® Processing Cores¹	NVIDIA RT Cores	Tensor Cores	GPU Memory	Peak Memory Bandwidth	Memory Type	Memory Interface	TGP Max Power Consumption²	DisplayPort³	PCIe Generation	Single Precision Floating-Point Performance (TFLOPS, Peak)⁴	Tensor Performance (TFLOPS, Peak)⁵	NVIDIA FXAA™ / TXAA™ Anti-Aliasing	NVIDIA RTX Desktop Manager	MAX-Q Technology	NVENC / NVDEC⁶	

Laptop GPUs

NEW	NVIDIA RTX 5000 Ada Generation	9,728	76 (3rd Gen)	304 (4th Gen)	16 GB ECC⁷	576 GB/s	GDDR6	256-bit	80-175W	1.4a	4	42.6	681.8	✓	✓	✓	✓
	NVIDIA RTX 4000 Ada Generation	7,424	58 (3rd Gen)	232 (4th Gen)	12 GB ECC⁷	432 GB/s	GDDR6	192-bit	60-175W	1.4a	4	33.6	538.0	✓	✓	✓	✓
	NVIDIA RTX 3500 Ada Generation	5,120	40 (3rd Gen)	160 (4th Gen)	12 GB ECC⁷	432 GB/s	GDDR6	192-bit	60-140W	1.4a	4	23.0	368.6	✓	✓	✓	✓
	NVIDIA RTX 3000 Ada Generation	4,608	36 (3rd Gen)	144 (4th Gen)	8 GB ECC⁷	256 GB/s	GDDR6	128-bit	35-140W	1.4a	4	19.9	318.6	✓	✓	✓	✓
	NVIDIA RTX 2000 Ada Generation	3,072	24 (3rd Gen)	96 (4th Gen)	8 GB	256 GB/s	GDDR6	128-bit	35-140W	1.4a	4	14.5	231.6	✓	✓	✓	✓
NEW	NVIDIA RTX A5500	7,424	58 (2nd Gen)	232 (3rd Gen)	16 GB ECC⁷	512 GB/s	GDDR6	256-bit	80-165W	1.4a	4	24.7	197.8	✓	✓	✓	✓
	NVIDIA RTX A4500	5,888	46 (2nd Gen)	184 (3rd Gen)	16 GB ECC⁷	448 GB/s	GDDR6	256-bit	80-140W	1.4a	4	18.5	148.4	✓	✓	✓	✓
	NVIDIA RTX A3000 12GB	4,096	32 (2nd Gen)	128 (3rd Gen)	12 GB ECC⁷	336 GB/s	GDDR6	192-bit	60-130W	1.4a	4	14.1	113.0	✓	✓	✓	✓
	NVIDIA RTX A2000 8GB	2,560	20 (2nd Gen)	80 (3rd Gen)	8 GB	224 GB/s	GDDR6	128-bit	35-95W	1.4a	4	9.3	74.3	✓	✓	✓	✓
	NVIDIA RTX A1000 6 GB	2,560	20 (2nd Gen)	80 (3rd Gen)	6 GB	168 GB/s	GDDR6	96-bit	35-95W	1.4a	4	9.3	74.6	✓	✓	✓	✓
NEW	NVIDIA RTX A1000	2,048	16 (2nd Gen)	64 (3rd Gen)	4 GB	224 GB/s	GDDR6	128-bit	35-95W	1.4a	4	7.5	59.7	✓	✓	✓	✓
	NVIDIA T600	896			4 GB	192 GB/s	GDDR6	128-bit	35-60W	1.4a	4	2.5		✓	✓	✓	✓
	NVIDIA RTX A500	2,048	16 (2nd Gen)	64 (3rd Gen)	4 GB	112 GB/s	GDDR6	64-bit	20-60W	1.4a⁸	4	7.0⁸	56.0⁸	✓	✓	✓	✓
	NVIDIA T550	1,024			4 GB	112 GB/s	GDDR6	64-bit	20-60W		4	3.7		✓	✓	✓	✓

- CUDA parallel processing cores cannot be compared between GPU generations due to several important architectural differences that exist between streaming multiprocessor designs.
- Maximum possible power consumption including the Dynamic Boost algorithm. For system specific GPU TGP, please consult your OEM/solution provider.
- Display support varies by system-level implementation. Check with your workstation OEM vendor for system specific configurations. Adaptors available for DVI-SL, DVI-DL, HDMI, and VGA.

- Peak rates are based on GPU boost clock.
- Effective TFLOPS using the sparsity feature. NVIDIA Ada Lovelace architecture using FP8 matrix multiply with FP16 or FP32 accumulate; NVIDIA Ampere architecture using FP16 matrix multiply with FP16 or FP32 accumulate.
- Number of NVENC and NVDEC may vary by GPU. GPU specific details can be found here: <https://developer.nvidia.com/video-encode-and-decode-gpu-support-matrix-new>

- Ensures data integrity and reliability by eliminating soft errors on direct random-access memory (DRAM) only.
- Peak FLOPS and display support for NVIDIA RTX A500 Laptop GPU varies by system configuration. Check with your OEM system vendor to confirm which specification is supported.

For more information on NVIDIA mobile products, visit: www.nvidia.com/en-us/design-visualization/rtx-professional-laptops/

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