PNY | **NVIDIA.**

DO MORE, FASTER
Get to Market in No Time With the
Power of NVIDIA RTX

Screen image: Candra Diningrat, ISID

Explore the Next Generation of GPU-driven Product Development

Providing designers and engineers with the right tools to work as efficiently as possible is the key to success in today's hyper-challenged business environment. With high-end professional GPUs, design and engineering teams can harness the power of photorealistic visualization, real-time simulation, AI, generative design, and additive manufacturing to stay ahead of the competition and bring amazing new products to market faster. In addition, manufacturing workflows are becoming more advanced with organizations incorporating new technologies, such as AI, VR/AR, real-time rendering, IoT, and simulation. Adopting these technologies, along with simulating earlier in the design process, helps reduce costs, provide higher-quality visualizations, optimize product quality, accelerate product development, and improve manufacturing efficiencies.

CAD application features and manufacturing and product design workflows are expanding with a shift towards higher fidelity graphics. Products are becoming more complex due to the growing numbers of sensors, electronic components, and connectivity expected by customers. This has led to the product development process having to incorporate multi-disciplinary design and simulation along with the rapidly growing size and complexity of models and datasets.

Virtual design reviews are becoming more common with the growing adoption of VR and AR technology in the industry.

Collaboration is moving towards 3D. 3D models used to be the deliverable, but now they are an integral part of the model-based enterprise being adopted by manufacturing organizations. With 3D models serving as the single source of truth, there is better collaboration between internal teams, suppliers, and other stakeholders.

NVIDIA RTX A4500 For Manufacturing and Product Development

The NVIDIA RTX A4500, based on the latest NVIDIA Ampere GPU architecture, provides the power, performance, memory, and features that are perfect for high-end manufacturing and product development workflows. It combines the latest-generation RT Cores, Tensor Cores, and CUDA® cores with 20GB of memory for accelerated rendering, AI, graphics, and compute performance. Connect two RTX A4500s for 40GB of memory with NVIDIA NVLink to work with larger models, drive simulations, and power complex multi-application workflows. With the RTX A4500, design engineers can enhance the quality and realism of their product designs by implementing photorealistic 3D rendering with real-time ray tracing into their workflows and running more upfront simulations. The A4500 lets design teams take advantage of VR/AR visualization technology to accelerate product design and development, empowering designers and engineers to bring products to market faster.

Use Cases

CAD
> Quickly create high-fidelity models
> AI-augmented workflows
> Tackle large datasets effortlessly

RENDERING
> Create more realistic renderings of models in a shorter amount of time. With AI-based denoising technology, models are rendered quickly with complete fidelity and no noise.

SIMULATION
> Run simulations earlier in the design process to accelerate the overall product development timeline.

VR/AR/MR SOLUTIONS
> Seamless connectivity to next-gen HMDs for smooth, immersive experiences with VR/AR/MR or XR visualization technologies.

Accelerate Product Development Workflows With the NVIDIA RTX A4500

NVIDIA RTX A4500 is the ideal solution for high-end manufacturing and product design workflows, empowering design engineers to develop high-quality, true-to-reality product designs.

CUDA CORES
7,168 NVIDIA Ampere architecture-based CUDA cores provide up to 23.7 TFLOPS of single-precision floating-point (FP32) performance for 3D graphics and compute-intensive workloads.

RT CORES
56 second-generation RT Cores accelerate real-time photorealistic rendering performance for major rendering applications.

TENSOR CORES
224 third-generation Tensor Cores accelerate AI-augmented applications. By leveraging AI acceleration with Tensor Cores, AI-augmented tools such as generative design or DLSS can provide for faster designs and higher-resolution visualizations.

20GB OF GPU MEMORY
The RTX A4500 features 20GB of GDDR6 memory with ECC (error correction code). Also, third-generation NVLink provides 40GB of combined memory with two A4500 cards, providing the memory needed for large design, rendering, and simulation workflows.

VIRTUAL REALITY
The RTX A4500 is a VR-Ready professional solution enabling designers and engineers to leverage VR as a design tool in their development workflows. Especially in designing physically large products, creating physical prototypes of these products can be expensive, so a VR prototype has high value.

ENTERPRISE MANAGEMENT
The NVIDIA Enterprise Management Toolkit (NVWMI) is a robust set of asset management capabilities for IT administrators, including end-user display configuration and GPU monitoring. The toolkit's NVIDIA driver installer provides a flexible, convenient way to scale up the deployment of driver updates to hundreds of workstations from anywhere on the company network.

ISV CERTIFICATIONS
ISV certifications provide additional testing to ensure stability, performance, and reliability. ISV certifications for leading CAD and rendering applications are only available on professional GPUs.
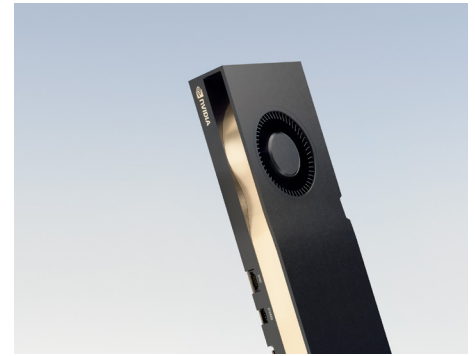
KEY SOLUTION TECHNOLOGIES
> Ray tracing
> Real-time simulation
> Artifical intelligence
> VR

KEY SOLUTION PROOF POINTS
> A single NVIDIA RTX A4500 reduced the rendering time by a massive 97%.

WHAT'S IN IT FOR ME?
> Complete hardware and software support
> Enterprise-level support at no additional cost
> Long product life cycles, multi-year product availability
> Enterprise management tools and drivers for stability and reliability
> Certification and support of CAD, CAE, and rendering apps

For more information about NVIDIA RTX A4500, visit
www.pny.com/nvidia-rtx-a4500