

Synopsys and AGEIA

Leading DesignWare IP for PCI Express Helps Achieve High Performance Goals for Game Physics Processor



“After careful analysis, we found that the DesignWare IP for PCI Express provided us with the latency, throughput and feature requirements that we needed.”

– Otto Schmid, Vice President of Hardware Engineering, AGEIA

Business

AGEIA is dedicated to delivering dynamic interactive realism to the ever-demanding complexity of next generation games. Its flagship solution, AGEIA PhysX, is the world's first dedicated physics engine and physics processor to bridge the gap between static virtual worlds and responsive unscripted physical reality.

AGEIA Challenges

- Meet performance requirements
- Lower overall development costs
- Achieve time to market goals

Solution

- DesignWare® digital controllers for PCI Express®

Benefits

- Achieved first pass silicon success for a complex chip containing over 200M transistors, running at 600 MHz
- Lowered integration risk and development costs by acquiring high quality IP
- Received excellent support from applications engineers

Overview

Delivering physics in games is no easy task. It's an extremely compute-intensive environment based on a unique set of physics algorithms that require tremendous amounts of mathematical and logical calculations supported by massive memory bandwidth. Simply put, it requires the AGEIA PhysX processor: a specialized accelerator dedicated solely to delivering rich immersive physical gaming environments and features.

Until now, only limited software physics have been integrated in games. That means physics computation has been handled by the general purpose CPU which is already burdened with the ever increasing demands of today's advanced games including game logic and artificial intelligence. The AGEIA PhysX Processor delivers the computing horsepower necessary to enable true, advanced physics, making games more realistic. The AGEIA PhysX processors are designed to simultaneously handle high degrees of fidelity, scale, interaction and sophistication.

“We knew the DesignWare IP for PCI Express was of high quality, and were not about to take any chances by going with another vendor. Furthermore, the technical support we received from Synopsys’ was exemplary, better than our experience with other IP vendors.”

– Otto Schmid, Vice President of Hardware Engineering, AGEIA

Leading IP Features

AGEIA's next generation physics simulation processor will enable the creation of highly interactive, high performance computer games with fully simulated environments for an unparalleled level of realism. The chip contains over 200M transistors with massive internal bus bandwidth, standard external bus interfaces, and sophisticated memory architecture. To help meet their performance and time to market goals, AGEIA went with the company they had a proven history with, and trusted – Synopsys.

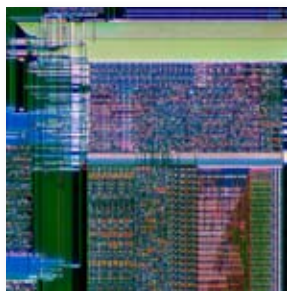
The DesignWare IP for PCI Express provided AGEIA with a core that met their low latency, high throughput and feature requirements. In addition, the provided coreConsultant tool enabled AGEIA to easily install, integrate and configure the core without any problems. By acquiring the IP from Synopsys, AGEIA was able to save up to 12 months on their chip development time and gain a competitive advantage.

High Quality and Excellent Support

Based on Synopsys' widely adopted DesignWare IP for PCI Express, AGEIA trusted that the IP would be of high quality and compliant to the standard. Not surprisingly, DesignWare IP for PCI Express enabled AGEIA to achieve first pass silicon success and pass the PCI-SIG compliance testing without any issues.

AGEIA had worked with a number of IP vendors in the past and found the Synopsys' support team to be exemplary. In the few times that AGEIA needed support, the applications engineers were always knowledgeable and responsive.

Using proven DesignWare IP for PCI Express helped AGEIA achieve their performance requirements, lower their overall development costs and enabled them to focus their valuable resources on delivering a highly differentiated product to the market.



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– Otto Schmid, Vice President of Hardware Engineering, AGEIA

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