


## SUCCESS STORY



nSys defines Verification Matrix for Matrox Graphics

### THE CUSTOMER

Matrox Graphics Inc. is the leading manufacturer of graphics solutions for professionals and has been delivering high-quality, innovative 2D/3D, and video graphics accelerators for more than a quarter century. Matrox combines its proven graphics chip designs, reliable software, and dependable card manufacturing expertise to produce products that are reputed worldwide for their superior image quality, practical ingenuity, and unwavering stability.

### BUSINESS NEED

While the first PCI Express chip development stages in Matrox were being planned, they decided to go in for a third party Verification IP solution. The main driver behind this decision was that they wanted to focus on their design. Since PCIe is a complex protocol, they wanted an independent interpretation of a third party which they could compare against.

In early 2003, Matrox decided to evaluate the various Verification IP solutions available in the market.

Meanwhile the chip development was taking place at fast pace. About five design engineers were working in development centers in Montreal at Matrox. The Verification IP would soon need to be finalized to verify the

"I take this opportunity to tell you that we really enjoyed working with you. Your engineers have worked very hard to incorporate all the changes that we requested. All this validates my decision of selecting nSys. You have helped us in successfully taping out a new product."

Mr. Andre Testa  
ASIC Design Team Lead

World's largest portfolio of Verification IPs

next generation chip being developed day and night by the Matrox engineers. The Verifications IP would be able to weed out any bugs & tape-out a successful product.

**THE CHALLENGES**

Matrox was looking for a commercial VIP which could be easily integrated with their verification environment. In the words of Mr. Andre Testa, Team Leader ASIC Engineering at Matrox Graphics, “My main concern now is the effort needed to incorporate a VIP in our verification environment.”

**THE SOLUTION**

After exhaustive evaluation of all the products available in the market, Matrox zeroed in on nSys Verification Suite (nVS) for PCI Express, a product developed by nSys Design Systems.

On selecting nVS for PCI Express, Mr. Andre Testa commented, “The feature set presented in your user guide is really strong and is compelling me to consider nSys as our prime choice for the BFM which

we are going to use for our PCI Express development.”

By selecting nVS for PCIe, Matrox developed a world class verification environment to facilitate its design engineers.

“PCI Express is a key technology for our next-generation Graphics offering and we've developed a very sophisticated verification environment to ensure the quality of this new interface,” said David Chiappini, ASIC Project Director at Matrox.

Having implemented a by-16 Endpoint device, Matrox needed to fully support all possible packet sequencing scenarios directed to its device. Therefore needing an easy yet efficient way to reproduce all those scenarios was of prime importance. As reported by Mr. Andre Testa “The nSys verification tool is very intuitive to use and has all the flexibility needed to generate all desired PCI Express traffic in a very simple manner”.

**Matrox taped out successfully on schedule.**

**KEY BENEFITS**

- **First-time right silicon** by using nVS for PCIe
- **Higher Verification productivity:** nVS for PCIe provided all the flexibility needed to generate the desired PCI Express traffic in a very simple manner
- **Minimized effort** needed to incorporate the Verification IP in the verification environment
- **Faster learning:** Since the nVS for PCIe is very intuitive to use

**About nSys**

nSys leverages the world’s largest portfolio of Verification IPs to provide products & services to Accelerate Designs for its customers developing ASIC, FPGA or IP.

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