

Synopsys and iVivity

High Quality DesignWare IP for PCI Express, XAUI, and DDR Lowers Power and Area



“We chose Synopsys IP because of its top notch quality and reliability. The IP was also smaller and lower in power, compared to other vendors we evaluated, which helped us to achieve our power and reliability targets.”

—Jim O'Connor, Senior VP of Engineering, iVivity

Business

Silicon solutions that enable unified voice, video and data networks.

Challenges

- Bringing complex 10M gate chip to market
- Reducing power
- Reducing chip area and cost

Solution

- DesignWare® IP For PCI Express®
- DesignWare XAUI PHY
- DesignWare DDR I/O Libraries

Benefits

- DesignWare IP helped iVivity® to achieve their chip goals including reducing power by 40%, while doubling the chip performance and lowering the silicon cost compared to previous generations of chips.

Overview

iVivity develops leading-edge silicon solutions that enable unified voice, video and data networks. The latest iDiSX® 1000 is a storage network processor chip that is optimized for iSCSI 10 Gigabit-based designs. The iDiSX1000 family represents iVivity's next-generation of hardware based multi-protocol acceleration silicon for system designers to utilize in the design and development of systems to support the growing voice, video and data digital infrastructure. With higher levels of integration and standard based programming platforms and tools the iDiSX architecture provides OEMs ways to lower cost, reduce time to market and complexity for new systems.

When iVivity was looking for IP for the iDiSX 1000 chip, they turned to Synopsys to help meet their design challenges. Although performance was the main issue, iVivity also had integration, power and cost requirements that were critical to the success of the design.

“We felt that the support from Synopsys was excellent, the best we have seen in the industry. The IP was easy to integrate and of very high quality.”

—Jim O'Connor, Senior VP of Engineering, iVivity

Synopsys – Leading IP Features

With a complex design that needed a great deal of performance, iVivity and Synopsys worked closely together to ensure the success of the iDiSX 1000 chip. Synopsys provided iVivity with a complete PCI Express solution that included a digital core that was 20% smaller in area than competitive offerings and highly optimized for performance. The wealth of test capabilities, including the PHY's industry leading advanced built-in diagnostics, were a key differentiator for iVivity as well.

The result of this collaboration helped enable iVivity to reduce their overall chip cost by 3X, more than double the performance of the design and reduced the power consumption by up to 40%.

Synopsys – High Quality and Great Support

The PCI Express digital controller and PCI Express PHY enabled a seamless, proven solution to iVivity's need for a high performance PCI Express interface. The IP was of extremely high quality; in fact iVivity didn't find a single bug in the integrated solution.

From support during the IP evaluation, through IP installation and use, Synopsys application engineers provided great support in all phases of the chip design effort. When asked if iVivity will be using DesignWare IP in future designs, the answer was: “Without a doubt.”



“The advanced diagnostic and test capabilities of Synopsys’ PCI Express and XAUI PHYs lead the market. They clearly differentiate Synopsys’ solution from their competitors – a key requirement for networking applications.”

—Jim O'Connor, Senior VP of Engineering, iVivity

SYNOPSYS®
Predictable Success

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