

Hitachi Selects Gennum's Snowbush IP PHY and Inventure's Z-core Controller for PCI Express[®] 3.0

Robust Solution Enhances Yield and Performance of PCIe[®] 3.0 Products

BURLINGTON, Ontario, June 20, 2011 – The [Gennum](#) (TSX: GND) [Snowbush IP Group](#), a leader in high-speed serial interface IP (intellectual property), announced that Hitachi Ltd., Information & Telecommunication Systems Company-Micro Device Division, Japan, has selected its PCI Express[®] 3.0 PHY IP and the Inventure Z-core PCI Express 3.0 Controller IP, for its next generation chips. Snowbush IP and Inventure will be demonstrating the solution at the upcoming [PCI-SIG Developers Conference](#) on June 22-23, 2011, in Santa Clara, California.

With twice the throughput of PCI Express 2.0 in the same board area, [PCIe 3.0](#) is expected to deploy quickly, given the explosion in content pressing the computing, storage and server markets. The combination of Inventure's Controller with the Snowbush PHY IP provides a solution that helps chip manufacturers rapidly design and implement PCIe 3.0-enabled products, speeding time to market.

"In our constant drive to develop better performing and higher yielding products for our customers, we look for IP vendors with the expertise to deliver integrated solutions to meet our exacting specifications. Snowbush IP and Inventure do just that," said Nobuo Tamba, General Manager of the Design and Development Operation, Micro Device Division, Information & Telecommunication Systems Company, Hitachi ,Ltd. "Snowbush IP and Inventure provided us with exceptional support, enabling us to launch a very robust PCI Express 3.0 solution."

"Working with Snowbush IP to provide an integrated solution to establish interoperability for Hitachi fulfills our mission of offering a complete vertical solution for PCIe 3.0, including both the Digital Controller and the PHY", said Hironori Ando, Director and CTO, Inventure, Inc. "Our high performance and high quality, area and power optimized configurable Z-core PCI Express 3.0 Controller is a perfect match for the Snowbush PHY. The endorsement of our joint customer, Hitachi, is proof that we are succeeding."

"Data throughput demands are driving the need for better performing interfaces such as PCI Express 3.0", said Kevin Walsh, Marketing Director, Snowbush IP. "Our PCI Express 3.0 PHY offers advanced adaptation and programmability to meet the challenge of difficult and non-compliant channel characteristics. We give our customers the additional margin they need to be confident that their interfaces will exceed their performance requirements."

About the Solution

The Snowbush PHY conforms to PCI Express 3.0 Version 1.0, and has been licensed by multiple companies. It has a small silicon footprint and consumes little power, given its advanced performance. Its architecture includes a receive side (Rx) Continuous Time Linear Equalizer (CTLE) and a power optimized 5-tap Decision Feedback Equalizer with edge and center detection, which extend the PHYs performance beyond standard PCI Express 3.0 channels, including operation in noisy, long backplane channels. The PHY also has a transmit side (Tx) FIR and auto adapts as required by the PCI-Express 3.0 specification. The PCI Express PHY IP can be configured into X1, X2, X4, X8, or X16 lanes. Snowbush customers have implemented products exceeding 72 lanes using these configurations. Complete electrical programming of each lane is supported. The PHY IP also features an On-Chip Eye Monitor for observing the electrical performance and optimizing the operation to customers' particular channel environments.

The Inventure Z-core PCI Express 3.0 controller implements the port logic required to build a Root Complex, Endpoint, Switch or Dual-Core (switchable RT/EP) device. The configurable and scalable Z-core PCI Express 3.0 controller is compliant to the PCI Express 3.0, 2.0 and 1.1 and PIPE specifications. The high quality, synthesizable IP is available in a variety of data path widths, PIPE interface widths and operating frequencies for optimizing size, power and throughput specific to match the needs of various applications, such as consumer, enterprise and mobile applications.

About the Demonstration

At the upcoming PCI-SIG Developers Conference, Snowbush and Inventure will be demonstrating IP on a development board that houses both the PCI Express 3.0 PHY from Snowbush IP and the PCI Express 3.0 Digital Controller from Inventure. The demonstration will show the protocol transfer of PCI Express packets at 8GT/s in a back-to-back setup. Traffic will be monitored on a PCI-Express protocol analyzer that captures, decodes, and displays PCI Express 3.0 traffic. Interested parties will be able to discuss the solution with company experts and arrange for detailed follow up sessions to review the optimized performance metrics of the solution critical for effective deployment of the IP into an SOC/ASIC.

Snowbush Presenters at PCI-SIG

In addition to the product demonstration, Snowbush IP's leadership and expertise in PCI Express can also be seen in two presentations during the conference:

Topic: PCIe 3.0 IBIS-AMI Models for Channel Analysis
Presenter: Chris Holdenried, Senior Analog Designer at Snowbush IP

Date: Wednesday, June 22, 10:30 AM

Topic: Advanced Equalization Techniques for PCIe 8GT/s
Presenter: Angus McLaren, Senior Analog Designer and Analog Design
Manager at Snowbush IP

Date: Thursday, June 23, 9:00 AM

Availability

Both the Snowbush PHY IP and the Inventure Z-core Controller IP for PCI Express 3.0 are available today.

About the Gennum Snowbush IP Group

The Gennum Snowbush IP group offers a team of interconnect specialists to design and deliver silicon-proven, high-speed serial interface IP. Comprising one of the industry's most robust, widely-deployed, production-tested and customizable family of IP cores, the Snowbush IP portfolio satisfies the needs of today's most demanding high-speed serial communication protocols and applications. The offering includes complete, integrated, PHY and controller solutions for standards like USB, PCI Express® and Serial ATA (SATA), and single and multi-standard SerDes for applications with data rates from 1 Gb/s to over 10 Gb/s. Gennum's Snowbush IP group is committed to supporting customers with diverse foundry and process requirements, offering IP cores for TSMC, UMC, Common Platform, SMIC, and Fujitsu processes. For more information visit www.snowbush.com.

About Gennum

Gennum Corporation (TSX: GND) designs innovative semiconductor solutions and intellectual property (IP) cores for the world's most advanced consumer connectivity, enterprise, video broadcast and data communications products. Leveraging the company's proven optical, analog and mixed-signal products and IP, Gennum enables multimedia and data communications products to send and receive information without compromising the signal integrity. A recognized award-winner for advances in high definition (HD) broadcasting, Gennum is headquartered in Burlington, Canada, and has global design, research and development and sales offices in Canada, Germany, India, Japan, Korea, Mexico, Taiwan, the United States and the United Kingdom. www.gennum.com.

About Hitachi

Hitachi, Ltd., (NYSE: HIT / TSE: 6501), headquartered in Tokyo, Japan, is a leading global electronics company with approximately 360,000 employees worldwide. Fiscal 2010 (ended March 31, 2011) consolidated revenues totaled 9,315 billion yen (\$112.2 billion). Hitachi will focus more than ever on the Social Innovation Business, which includes information and telecommunication systems,

power systems, environmental, industrial and transportation systems, and social and urban systems, as well as the sophisticated materials and key devices that support them. For more information on Hitachi, please visit the company's website at <http://www.hitachi.com>.

About Inventure

Founded in 2006, Inventure develops, markets, and licenses high-speed serial interface IP for advanced systems-on-chips (SoCs) used in a variety of broadcasting, office equipment, and networking and storage applications. Inventure's silicon proven interface IP portfolio includes PCI Express, USB3.0, DisplayPort, 1/10G Ethernet and OCP interconnect. In particular, Inventure's PCI Express IP, Z-core PCI Express, has been selected by 30 Japanese enterprises, in more than 80 projects in Japan. Inventure is headquartered at Shin-Yokohama Japan, with sales and R&D. More information is available on Inventure's website at <http://www.inventure.co.jp/en/company/>

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