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# **OKI SEMICONDUCTOR LICENSES INNOVATIVE**

## SEMICONDUCTORS, INC. *FLEXFIRE*<sup>™</sup> SERIAL BUS TECHNOLOGY

#### Innovative's Family of IEEE-1394 Link Layer Cores Provides Oki Customers a Cost-Effective High-Speed Method for Interconnecting Electronic Peripheral Products

SUNNYVALE, Calif., -- January 26, 1998 -- Oki Semiconductor today announced that it has licensed Innovative Semiconductors, Inc.'s (Innovative)  $FlexFire^{TM}$  serial bus technology. Innovative's family of IEEE-1394 ASIC cores are designed for use in computer and consumer peripheral products such as storage devices, printers, scanners, DVDs, camcorders and VCRs. These building blocks offer users a cost-effective, scaleable architecture that makes Innovative's *FlexFire*<sup>TM</sup> technology ideal for designing next-generation multimedia PC systems.

The demand for higher throughput on peripheral devices has become crucial with the increasing multimedia content in PCs, such as real-time color video, the digitization of information and the convergence of PC and consumer electronics. Innovative's IEEE-1394 high-speed serial bus technology accommodates this industry trend by featuring real-time data transfer at rates of 100 to 400 megabits per second (Mbps) with up to 1 gigabit per second (Gbps) on future-generation products.

Nabil Takla, president and CEO of Innovative Semiconductors, Inc. said, "Last year we achieved in-system verification of our SL758 Core, which is compatible with Texas Instruments' GPLynx general-purpose 1394-link layer device. We are now taking the next step by introducing an implementation of our *FlexFire*<sup>TM</sup> architecture targeted at ASIC vendors." Takla continued, "The introduction of these new cores reflects the enthusiastic acceptance of our IEEE-1394 cores by our customers and their feedback about their use in a system environment. Working together with Oki Semiconductor, we can offer system designers all the building blocks required to enable the design of high-performance, low-cost IEEE-1394 controller chips."

The licensed technology consists of three RTL-synthesizable Link Layer cores—the SL750 which implements a basic Link Layer core as specified in the IEEE standard; the SL753 which implements the control of the FIFO (first-in/first-out) that buffers the application logic from the Link Layer core and the controller; and the SL755 which is a full Link Layer controller consisting of the SL750, SL753 and a user-friendly application hardware interface.

The *FlexFire*<sup>TM</sup> architecture cores can be used with little or no modification for a variety of applications and implementations of the current IEEE-1394-95 and the forthcoming IEEE-1394-A/B standard. Oki's ASIC customers will be able to develop new applications that are IEEE-1394 compliant in a minimum amount of time by using these building blocks. For example, a disk or printer controller designer can use these same cores by adding simple application-specific logic. This reuse of the cores in multiple applications was an important design goal. The cores support cycle master operation, isochronous queue requests and can operate with an isolated PHY-LINK bus. Oki's advanced ASIC technologies combined with Innovative's IEEE-1394 cores will help to further expand Oki's solution for system-on-a-chip design.

"As one of the industry's leading serial interface suppliers, we're focused on providing the most cost-effective and innovative solutions for our customers," stated Ron DiGiuseppe, senior marketing/application engineering manager of Oki's Application-Specific Business Unit. "Capitalizing on Innovative's unsurpassed expertise in serial bus technology will help provide our customers with a unique and compelling interface solution for connecting next-generation PCs with electronic peripheral products. The 1394 link layer function is a natural complement to our existing library of ASIC cores."

The Link Layer cores were fabricated using a three-layer metal 0.5 micron process. A four-layer metal .35 micron process will be used in the manufacture of the 1394-A. Oki currently offers the industry compatible *FlexFire* 1394-95 functions as library soft-macro cores and will support IEEE-1394-A-compliant cores in Q1 '98. Innovative and Oki recently demonstrated working silicon of the 1394 serial bus technology at COMDEX, Las Vegas.

#### About Oki

Oki Semiconductor, founded in 1977, manufactures a broad line of advanced integrated circuits for use in computers, EDP, automotive, telecommunications and consumer products. A leader in CMOS memories, gate arrays and ASICs, Oki's product lines also include speech synthesis, microcontrollers and advanced communications devices for wired, wireless and fiber optic applications. As a certified vendor of Universal Serial Bus (USB), Oki's ASIC technology offers PCs a plug-and-play connection to a fast-growing list of new peripherals. Oki is also a leader in packaging technology, providing sophisticated options to its customers. Headquartered in Sunnyvale, Calif., Oki has manufacturing facilities in Japan, Thailand and Portland, Ore. All manufacturing facilities are ISO 9001-certified. Oki Semiconductor is a division of OKI America Inc., a subsidiary of Oki Electric Industry Co, Ltd.

#### About Innovative Semiconductors, Inc.

Established in 1992, Innovative Semiconductors, Inc. develops synthesizable RTL (Register Transfer Level) cores, the building blocks for developing high-performance ICs and chipsets for video and communications applications. The company's products include cores that support the Video Interface Port (VIP) standard, the Video Compression standards and the Universal Serial Bus (USB) standard. The company is a member of the 1394 Trade Association, VESA, VSI, Rapid and the USB-IF. Innovative Semiconductors is located at 2570 El Camino Real, Suite 205, Mountain View, CA 94040. Phone: (650) 917-5925, e-mail: sales@isi96.com. For more information about Innovative Semiconductors, Inc., please access the company's website at http://www.isi96.com.

Editors note: FlexFire<sup>M</sup> is a trademark of Innovative Semiconductors, Inc. All other brand or product names may be trademarks or registered trademarks of their respective companies.

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