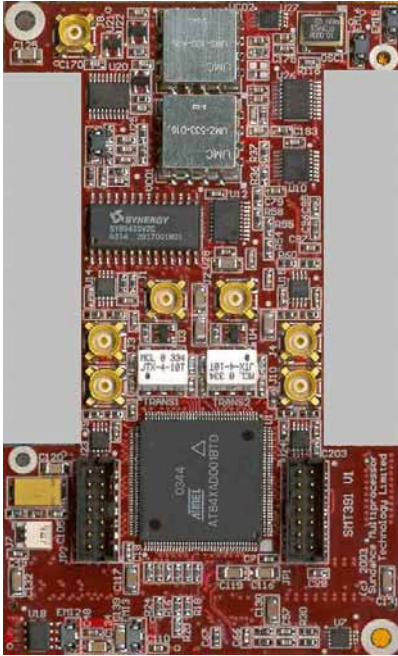# PRESS RELEASE

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Sundance unveils its Flagship Data Acquisition Module for Digital Signal Processing

RENO, NEVADA – October 10, 2004 - Sundance, a cutting edge technology developer of high performance signal processing and data acquisition systems, today announced its new high throughout configurable data acquisition module (DAQ). The SMT391, the flagship of Sundance's new family of high performance data acquisition systems, is a powerful 1 giga sample per second (GSPS), dual channel analog-to-digital converter (ADC). This high-performance 8-bit, DAQ system makes the SMT391 ideal for high bandwidth applications such as high-speed test and instrumentation, satellite communications, software defined radio (SDR), direct RF/IF processing, direct RF down conversion, and radar.

The SMT391, a "daughter module" that outputs data to a network of Sundance's reconfigurable computing and DSP systems, is managed by a Xilinx® Virtex-II Pro™ FPGA. The Virtex-II Pro FPGA, with its IBM PowerPC™ embedded processor capabilities, manages the data transfers to a variety of communication channels such as ComPorts, Sundance High-speed Bus, and Xilinx RocketIO™ Multi Gigabit Transceivers (MGTs). These channels are compatible to a wide range of Sundance processors and I/O modules. The FPGA controls all digital functions on the module as the digital output of the Atmel® broadband converter is fed into the FPGA. This data is then stored in an onboard DDR SDRAM for non real-time processing.

"The SMT391 leverages fully the power, performance and reconfigurability flexibility of the Xilinx® Virtex-II Pro™ and meets the stringent requirements of wireless and signal processing applications" said Dr. Nory Nakhaee CEO of Sundance. "The combination of Sundance's signal processing technologies and high-speed broadband expertise combined with the power of the Virtex-II Pro™, makes the SMT391 more than just a data acquisition module as it is also high-speed converter, a processor

EDITORIAL ENQUIRIES

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and a gateway to an array of powerful processing nodes " concluded Nakhaee.

A highly compact twin board design makes up the SMT391. A top layer board, the daughter board, is coupled to a base module via a Sundance LVDS Bus. This daughter board contains all the analog circuitry, the clock generation, trigger control, analog signal conditioning and as well a converter. This device handles all data acquisition and conversions. Analog data enters the top module via two analog data streams that are pre-conditioned before they enter the dual channel ADC converter. In conjunction to the two analog inputs, users can also provide the module with a custom clock and trigger.

"Sundance was one of the first to recognize the benefits our Virtex-II Pro can offer to high speed broadband applications," said Jerry Banks, director of Worldwide DSP Solutions Marketing at Xilinx. "The Sundance data acquisition system introduces a novel level of design, performance and flexibility that delivers the most advanced features engineers expect in a system oriented data acquisition module".

The base module is a reconfigurable computing system also powered by a Xilinx Virtex-II Pro FPGA. The FPGA is center to the base module as it controls all digital functions on the module. By separating the analog circuitry from the digital one, Sundance has not only substantially reduced cross-talk, but has also provided an astute heat-dissipation scheme for the bottom board components. Configuring the main FPGA is done via an on-board and in-system programmable logic that configured through an on-board JTAG interface. Configuration, sampling and transfer modes are set by configuration data received over the ComPorts or the RocketIO Serial Links.

The SMT391 is truly a reconfigurable data acquisition system; the Atmel® ADC converter digital outputs are fed into the FPGA where they can be processed by an optional user-designed intellectual property core. The data is transferred to a 64 Mbytes (per channel) DDR SDRAM memory.

When the SMT391is embedded in a larger system environment, this data is disseminated to other system modules via a high-speed bus interface. Alternately, data stream may also be transmitted over to the FPGA Serial Link interface.

"One of the most challenging design issues we faced in developing our standalone systems was the implementation of a cost effective high-speed ADC" said Lan Tran of the Naval Research Laboratory, Information Technology Division. "With Sundance's SMT391 high sampling rate, throughput and compatible DSP and FPGA systems we managed to meet our specification requirements and remained within our project budget constraints"

Designed for high-speed I and Q channel type applications, the SMT391.has two identical channels and all settings are applicable to both. Operations for both channels are the same, and there is only one sample clock for both channels and both channels will respond to the same trigger. The dual channel Atmel® converter converts the analog data, and a single 16bit parallel data-stream is generated for each channel. One stream is transmitted as is over the RSL interface for real-time type applications. The second data-stream can either be transmitted straight over the SHB interface or stored in DDR SDRAM every time a trigger is received. Pricing for the SMT391 starts at $6,550 USD, evaluation units and volume pricing are also available.

About Sundance

Sundance is a UK-based, ISO 9000 Compliant, independent company headquartered Chesham, U.K., and with offices in the United States and Italy. The company designs, develops, manufactures and markets high performance signal processing and reconfigurable systems for original equipment manufacturers in the wireless and signal processing markets. Leveraging its multiprocessor expertise and experience, Sundance provides OEM with modular DSP and FPGA-based systems as well as, Data Acquisition, I/O, Communication, and interconnectivity products that are so essential to multiprocessor systems where scalability and performance are important. With over fifty different modules and carriers for PCI, cPCI VME and Stand Alone platforms, Sundance is a solution provider to semiconductor, pharmaceutical, and factory automation industries. Sundance, founded in 1989 by the current directors, is a Xilinx Xperts and MathWorks' Connection program member.

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