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FOR IMMEDIATE RELEASE

INNOVATIVE TECH FOR DSP PROTOTYPERS

A couple of years ago Dr. Don Newman, the president and founder of Signalware Corporation, was faced with a trade off between offering a limited selection of moderately priced, standardized signal processing products and expensive, custom products that meet the diverse needs of our customers. Our customers use our digital processing and analog conversion devices in a wide variety of applications, including, custom laboratory equipment, production test and control equipment, and demonstration and prototype equipment in a wide variety of industries including telecommunications, medical research and entertainment. Part of our product flexibility requirement is addressed by using Field Programmable Gate Arrays (FPGA) to easily and quickly integrate a wide variety of analog conversion devices into our products.

The other product flexibility issue revolves around how to offer a wide variety of analog conversion functions at moderate prices. Analog converter devices using Low Voltage Differential Signaling (LVDS) have recently become available. Dr. Newman realized that these devices along with the LVDS capability of newer FPGAs, would allow for a more robust, high speed converter to FPGA connection. He further realized that a more robust connection along with recently introduced one-piece connectors would allow Signalware to develop an innovative modular product line that would be moderately priced and still offer the flexibility of custom products. This new line of signal processing boards, called the 400 Series, will be introduced to the market on November 1, 2006.

In this product line analog input and output functions are built onto separate I/O signal processing modules which can then be securely attached to a carrier board. The carrier boards contain Field Programmable Gate Arrays (FPGA) that connect signal processing modules to one another and other digital processors. Recently introduced FPGAs of various sizes provide both the flexible connectivity needed for customization and the high speed parallel digital arithmetic processing to meet the signal processing needs of high speed analog conversion devices.

Initially, we will introduce six I/O signal processing modules; four analog-to-digital (ADC) modules, and two digital-to-analog (DAC) modules. Within a year Signalware expects to have about twenty ADC modules and ten DAC modules. With this complement of analog signal processing modules, nearly a million combinations of input and output modules can be attached to the carrier board. Thus DSP

engineers will have all of the flexibility of a custom made signal processing boards for prototypes or small production runs.

The initial release will include the AED400 carrier board with a Spartan-3 XC3S1000 Xilinx FPGA. This board is designed to be mounted on a Texas Instruments C5x/C6x DSP Starter Kit (DSK) board as a daughter board via the TI DSK bus to provide an application solutions with both an FPGA and a DSP processor. The AED400 can also be operated in a stand alone manner with a power supply board, and up to three AED400 boards may be stacked.

The four initial ADC modules will offer capabilities including sampling resolutions ranging from 12 to 20 bits, throughput ranging from 250 Ksps (kilo samples per second) to 40 Msps (mega samples per second), and up to 24 channels of input on one AED400 board. The two initial DAC modules will offer 14 and 16 bits of resolution, throughput of 66 and 1 Msps, respectively, and up to 12 channels per board. When the full line of I/O signal processing modules are available the throughput will range up to 1 Gsps (one thousand million samples per second) and optional analog front end processing will offer digitally controlled filters and buffer gain control.

Other advantages of this new modular product line include dramatic improvement of our response time to customer orders, improvement of quality and reliability, and reduction of customer costs. This modular approach also means that if one of these boards is used for prototyping a project, for example, the board can later be easily and cheaply reconfigured for another project by simply purchasing additional I/O signal processing modules to meet the new requirements; it will not be necessary to purchase a new board. The engineer in the field can easily change the I/O signal processing modules attached to the original carrier board and reconfigure the FPGA to integrate the new modules. In fact, digital signal processing kits can be purchased which contain a carrier board along with a set of several different I/O signal processing modules. This signal processing kit provides an extremely flexible solution for many different applications and would be ideal for a university signal processing laboratory.

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