SP Devices

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NEWS RELEASE

(For immediate publication)

Signal Processing Devices Sweden AB (SP Devices) announces the launch of ADQ14, a 14-bit data acquisition board family with groundbreaking performance. Multiple input channels, 14 bits vertical resolution, and up to 2 GS/s sampling rate provide an uncontested performance edge in many application areas. With the launch of ADQ14, SP Devices consolidates its position as a world-leading supplier of high-performance data acquisition components and systems.

With the ADQ14, SP Devices expands its product portfolio of 14-bit digitizers currently including: ADQ14, SDR14, ADQ114, ADQ214, and ADQ1600. These products are widely used in applications areas such as spectroscopy, wireless systems, and fiber optics. With ADQ14 higher data rates and channel densities are available.

"The new ADQ14 digitizer showcases an unprecedented performance together with a high level of flexibility through various firmware and hardware options for our customers. The initial customer feedback is very encouraging and the ADQ14 is destined to become a real benchmark product in the market." says Tomas Wolf, CEO of SP Devices.

Applications and Advantages - ADQ14 will be the ideal choice for multi-channel particle physics experiments. The channel density and sampling rate of ADQ14 has never before been available in the 14-bit domain. For advanced time-of-flight applications, the unique combination of high sampling rate and dynamic range makes ADQ14 the preferred choice.

Within wireless communications, Software Defined Radios can now be easily implemented benefitting from the high linearity of ADQ14.

ADQ14 employs SP Devices' embedded and proprietary signal processing technologies for performance enhancement. The patented signal conditioning algorithm ADX eliminate mismatch errors otherwise known to degrade the effective resolution of time-interleaved ADC's. ADX enables the full potential of time-interleaving effectively doubling the sampling rate without any loss in resolution.

Baseline stabilization (DBS) is another core technology of SP Devices for pulse measurements. DBS provides a stable pulse reference level with up to 22 bits precision and opens up for very accurate pulsed-data measurements.

Radio systems designers benefit from IQE, an IQ-imbalance error correction technology, for wideband quadrature demodulator enhancement.

Many applications also benefit from the extremely compact design offered by the ADQ14. This simplifies integration in target systems without compromising the high performance of the ADQ14.

Configuration and Firmware options - The ADQ14 is tailored for the most advanced measurement tasks through an extensive options program offering:

- Host PC form factor options for optimized systems partitioning.
- Analog front-end options for meeting sensor and measurement requirements.
- Sampling rate options for building family of products with streamlined maintenance. And low cost of ownership.
- Embedded real-time custom digital signal processing solutions for advanced systems.
- SP Devices' design services for fast integration and short time-to-market.

The ADQ14 is available with several firmware options tailored for specific signal processing needs:

- *Advanced Time Domain firmware option (–FWATD*)

  High-speed time-interleaving and firmware for extreme dynamic range provide benefits in advanced Spectroscopy where previously undetectable weak pulses are now easily captured with 14 bit resolution at up to 2 GS/s. This firmware includes embedded signal processing for identification of pulse data, threshold functions for non-linear noise suppression, and waveform averaging for suppressing noise in repeated measurements.

- *Pulse Detection firmware option (–FWPD)*

  This option provides data compression for pulsed-data acquisition systems such as multi-channel physics experiments. This embedded signal processing features adaptive baseline methods for sensitive detection, adaptive record length for optimal memory usage, and multi-unit synchronization for systems with many channels.

- Software defined radio option (–FWSDR)

  When interfacing ADQ14 to balanced mixers, this firmware option provides digital down conversion and decimation along with real-time streaming to disk for storage of captured radio-frequency data.

If the firmware packages are not enough, the ADQ14 Development Kit makes the FPGA of the digitizer available for custom real-time signal processing such as particle classification enhancement, data reduction, etc.

Form factors - ADQ14 supports several possible systems designs:

- PCI Express

  This fast interface opens for rapid data transfer and advanced disk storage solution. The on-board FIFO of 2 GBytes handles burst data and PCI Express scheduling for real-time performance. The half-length PCI Express ADQ14 is easily integrated into PCs for self-contained solutions or small chassis for space-saving compact designs.

- USB3.0

  This form factor enables small-sized, 200 Mbytes/s transfer rate, stand-alone or flexible systems solution where the ADQ14 is placed inside the end equipment rather than in a host PC. Custom firmware processing, storage of data to disk, and signal processing in compact Micro PC are all easy-build solutions with the ADQ14 in USB3 form factor.

- PXI Express

  This format is specialized for modular instrument in a rough environment. Combining several ADQ14 in a single chassis one can easily configure multi-channel acquisition systems

SP Devices offers a specialized OEM support with the ADQ14. SP Devices' design services are always available for guidance to an optimized system solution. Through certified manufacturing partners, the ADQ14 can be offered in large quantities with a controlled quality.

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About SP Devices

SP Devices (Signal Processing Devices Sweden AB and Signal Processing Devices Inc.) provides digital signal processing IP for the enhancement of analog-to-digital conversion and high-speed digitizers. SP Devices' portfolio of products enables customers to build advanced systems with state-of-the-art analog-to-digital performance that advances the areas of test and measurement, software defined radio, radio base station transceivers, digital imaging, high-speed data acquisition and broadband communication. Additional company and product information is available at www.spdevices.com.