

NEWS RELEASE

(For immediate publication)

Signal Processing Devices Sweden AB (SP Devices) has received an order from the European Organization for Nuclear Research (CERN) for waveform digitizers to be used in the upgrade of the data acquisition system at the neutron time-of-flight facility (nTOF).



Source CERN

The order consists of twelve (12) ADQ412DC-3G digitizers - a product specifically designed to meet the challenging requirements set by CERN's particle physics experiments. With 12 bits vertical resolution and up to 3.6 GS/s sampling rate the ADQ412DC-3G allows for capture of weak signals with short time duration. The digitizer also includes a flexible analog front-end (AFE) that supports software controllable gain and DC-bias. This feature makes it possible to utilize the full input range when capturing unipolar signals that effectively doubles the resolution in such applications. Further the flexibility of the AFE makes it ideal for supporting a wide variety of sensors.

The nTOF-installation at CERN uses the synchronization capabilities of the ADQ412DC-3G to realize a flexible multi-channel system that can operate as either a 24- or 48-channel system sampling at 3.6 or 1.8 GS/s respectively to support detectors with different time constants.

Through its open FPGA structure, the digitizer allows for custom real-time signal processing such as particle classification enhancement, data reduction, etc.

Due to the high channel-count and high sampling rate the nTOF data acquisition system produces massive amounts of data that needs to be transferred to storage. Using a PCI Express-based approach the teams at CERN and SP Devices have jointly developed a storage solution capable of supporting a remarkable sustained data rate of 12 GByte/s.

"CERN is a world recognized physics experiment facility. It is an honor for SP Devices to be selected as the waveform digitizer supplier for the upgraded nTOF experiment. We are happy to supply CERN with our flagship product combining the best of our analog, digital and processing technologies" says Laurent Weber, EMEA Sales, SP Devices.

"SP ADQ412DC-3G was selected after a long process of characterization and testing in compliance with the standard IEEE 1241 and the project requirements as variable dynamic range, gain and offset DC accuracy, acquisition noise performance and data transfer to the host controller memory. The collaborative approach and the effective support provided by SP Devices have been the keys to reach the challenging performances requested by the experiment." says Alessandro Masi, Equipment Controls and Electronics section leader, CERN.

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About CERN

CERN, the European Organization for Nuclear Research, is the world's leading laboratory for particle physics. It has its headquarters in Geneva, Switzerland. At present, its Member States are Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Israel, Italy, the Netherlands, Norway, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom. Romania is a Candidate for Accession. Serbia is an Associate Member in the pre-stage to Membership. India, Japan, the Russian Federation, the United States of America, Turkey, the European Union, JINR and UNESCO have Observer Status. For additional information please visit <http://home.web.cern.ch/>

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.