

New digitizer cards deliver 4.7 GHz signal acquisition and analysis

*New flagship models by Spectrum Instrumentation combine
 10 GS/s sampling, 12-bit resolution, 4.7 GHz bandwidth and 12.8 GB/s data streaming*

Grosshansdorf, Germany – 13th September, 2023. Spectrum Instrumentation has extended the M5i flagship series of high-speed PCIe Digitizers, adding two new models with ultrawide bandwidths that go up to 4.7 GHz for -3 dB attenuation or even 5 GHz for -5 dB attenuation. The models M5i.3360 and M5i.3367 provide one and two channels respectively. Each card is capable of sampling at rates up to 10 GS/s, with 12-bit vertical resolution, specifically designed to deliver the most accurate acquisition and analysis of signals in the GHz range. The high bandwidth, combined with fast sampling, allows signals to be analysed for frequency content anywhere from DC to the Nyquist limit (half the sample rate, or up to 5 GHz), making them ideal for working with extremely fast signals in laser systems, semiconductor testing, spectroscopy, reflectometry and a wide variety of RF applications.

Oliver Rovini, Chief Technical Officer, said “At 4.7 GHz, these new digitizer cards offer our highest bandwidth capability to date. More bandwidth means less signal attenuation at higher frequencies. It also makes it possible to detect and measure faster pulses and signal edge speeds. As such, bandwidth is critical for any engineer or scientist that wants to measure and characterize high frequency electronic signals. Our flagship digitizer line, that is based on 12-bit ADC technology, now has seven different models with sampling rates from 3.2 to 10 GS/s and bandwidths from 1 to 4.7 GHz. The range lets our customers choose the performance level that perfectly fits their specific requirements.”



The new top models by Spectrum Instrumentation: 10 GS/s sampling rate with 12-bit resolution plus an extended top bandwidth from 3 to 4.7 GHz.

On-board memory and market-leading streaming speed

To handle a diversity of input signals, the raw acquisition performance is complimented by flexible front-end circuitry with programmable full-scale ranges, from ± 200 mV to ± 2.5 V, and input offset. Acquisitions can be stored in a generous 4 GB (2 GSamples) of on-board memory (16 GB or 8 GSamples optional) and transferred over the PCIe bus at the fastest speeds possible. All cards of the M5i series use 16-lane, Gen 3, PCIe technology, which allows the acquired data to be streamed at a staggering 12.8 GB/s. The on-board memory can be used as a ring-buffer, working much like a conventional oscilloscope, or as a FIFO-buffer for continuous data streaming. The data can also be sent to PC memory for storage or directly to CPUs and CUDA-based GPUs for customized signal processing and analysis.

Recording modes and trigger modes

Acquisitions can be made in both single-shot or multiple-waveform recording modes. Multiple-waveform recording allows the capture of numerous events, even at very high trigger rates. Conventional edge triggering, which includes trigger time stamping, is enhanced by a number of sophisticated trigger modes that help with the capture of the most elusive events. These include Window, Re-Arm, Delay and Software triggers, as well as the ability to use the cards inputs (channel, trigger and digital lines) to set up specific trigger conditions based on Boolean logic.

Drivers and software

Perfect for automated testing systems, the cards come with all the tools necessary to use them in a PC running either a Windows or Linux operating system. A software development kit (SDK) enables the cards to be programmed with today's most popular languages, such as C, C++, C#, Delphi, VB.NET, J#, Python, Julia, Java, LabVIEW, and MATLAB. The SDK contains

Headquarters

Spectrum Instrumentation GmbH, Germany
 Phone: +49 4102-6956-0
 Email: Info@spec.de

US Office

Spectrum Instrumentation Corp., USA
 Phone: (201) 562-1999
 Email: Sales@spectrum-instrumentation.com

all the required driver libraries as well as numerous programming examples. Alternatively, for users who don't want to write their own code, the company offers SBench 6 Professional. SBench 6 is a powerful measurement GUI for full card control, with display, analysis, storage, and documentation capabilities. It also includes processing techniques such as FFT's, for frequency domain analysis, and data interpolation for improved timing measurements.

5 years warranty

The new M5i.3360-x16 and M5i.3367-x16 cards carry a 5-year product warranty, with free software and firmware updates, as well as customer support directly from the engineering team for the life of the product. All the digitizer cards are available now with delivery being 4-6 weeks after the receipt of an order.

For more information, please visit www.spectrum-instrumentation.com

Video of the M5i digitizer series at Youtube: <https://youtu.be/nLJJdgg26P4>

About Spectrum Instrumentation

Spectrum Instrumentation, founded in 1989, uses a unique modular concept to design and produce a wide range of more than 200 digitizers and generator products as PC-cards (PCIe and PXIe) and stand-alone Ethernet units (LXI). In 30 years, Spectrum has gained customers all around the world, including many A-brand industry-leaders and practically all prestigious universities. The company is headquartered near Hamburg, Germany, known for its 5-year warranty and outstanding support that comes directly from the design engineers. More information about Spectrum can be found at www.spectrum-instrumentation.com

Headquarters

Spectrum Instrumentation GmbH, Germany
Phone: +49 4102-6956-0
Email: Info@spec.de

US Office

Spectrum Instrumentation Corp., USA
Phone: (201) 562-1999
Email: Sales@spectrum-instrumentation.com