

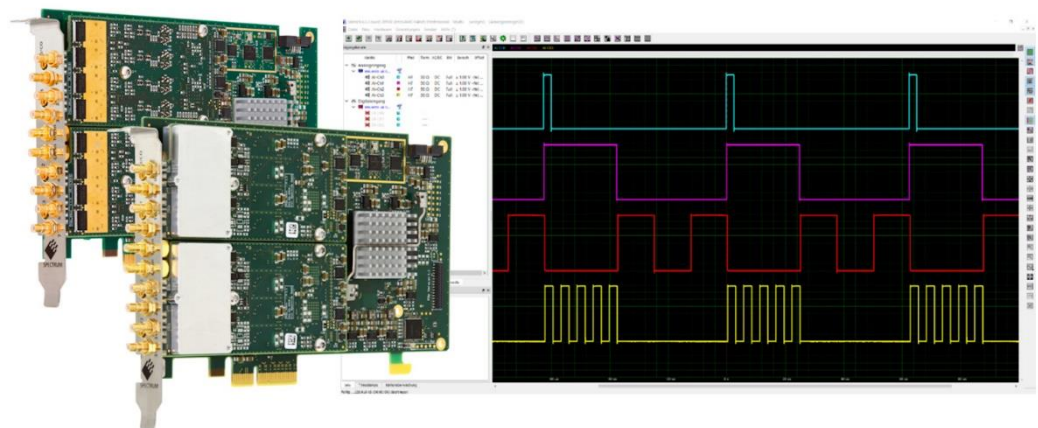
## Digital Pulse Generator capability for Digitizers and AWGs

*New option by Spectrum Instrumentation provides additional four digital sources*

**Grosshansdorf, Germany – June 7th, 2023.** A Digital Pulse Generator (DPG) option has been released for Spectrum Instrumentation's line-up of high resolution, medium speed, Digitizer and Arbitrary Waveform Generator (AWG) products. The option allows the units to produce digital pulses, and pulse streams, on up to four front panel Multi-Purpose I/O connectors; while simultaneously performing their regular tasks of acquiring, or generating, analog signals and waveforms. The new feature is ideal for a variety of automated test and measurement applications, including experiment control, AI and robotics, ATE, stimulus-response testing, system and machine control, component or sensor testing and more.

All the DPG functionality is implemented by using the on-board FPGAs of the PCIe-cards or LXI/Ethernet-instruments, so the new option runs parallel to the unit's other tasks. Control is via a simple programming structure that allows adjustment of the pulse characteristics for each of the four outputs, whether it is generating single pulses, pulse trains or continuous pulse streams. Key parameters, such as the pulse width, period, phase, or the number of pulses in a pulse train, are all programmable.

Once enabled, the DPG will output the pre-programmed pulses on the assigned Multi-Purpose I/O connector as soon as it receives a valid trigger. For maximum flexibility, the trigger can be generated by software, or from one of many different possible sources. These include all the products regular internal and external trigger sources, or even one of the other DPG channels. As the pulse generator outputs are intrinsically synchronized to the products acquisition or replay functionality, they are perfect for producing enabling or switching signals (e.g. for signal actuating). Furthermore, the ability to cascade the four different generators creates a convenient way to transform pulse repetition time scales.



*AWG card of the 65xx-series, digitizer card of the 59xx-series and 4 digital pulses generated by the new DPG-option - captured with Spectrum's measurement software SBench 6*

### Wide range of Digitizers and AWGs

The new option is available for 92 different Spectrum products. This includes the complete line-up of 59xx-series Digitizers, which consist of 24 different PCIe-cards and 28 different stand-alone LXI/Ethernet units. The new option also fits to the complete 65xx-series of AWGs, with 14 different PCIe cards and 18 LXI/Ethernet instruments. Even 8 of the combined Digitizer+AWG products can use the new Digital Pulse function. The 59xx Digitizers offer various sampling rates from 5 MS/s up to 125 MS/s, with 16-bit resolution and from 1 to 48 channels. Similarly, the 65xx AWGs are available with output rates from 40 MS/s to 125 MS/s, 16-bit resolution, and from 1 to 48 channels. The exceptionally wide product range lets users select the product performance that best matches their application.

The timing characteristics of the pulses generated by the DPG depend on the hardware used and the selected sampling clock. The parameters can be programmed with a resolution of 1 sample, while the maximum pulse frequency that can be produced, being half the maximum sampling clock, is 62.5 MHz. Designed to work with today's most common digital circuitry, the pulse amplitude levels are 3.3 V low voltage TTL (LVTTTL); TTL compatible for high impedance loads.

The low-cost DPG option (ordering code M2p.xxxx-DPG) is available for immediate delivery and can be supplied for new and

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existing products in the entire 59xx and 65xx range. Adding the option to any unit provides a conveniently synchronized timing interface between its acquisition, or generation, functionality and other external equipment.

**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](http://www.spectrum-instrumentation.com)

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