Ultrafast AWGs with Ethernet control for wideband signal generation

Spectrum Instrumentation presents new AWGs with 10 GS/s output rate and 16-bit resolution

***Grosshansdorf, Germany – 14. May 2025*. Spectrum Instrumentation has introduced four new Arbitrary Waveform Generators (AWGs) in its DN2.63x NETBOX series, delivering output rates up to 10 GS/s with 16-bit resolution. With easy control via Ethernet, these high-speed instruments connect directly to PCs, laptops or even the company network. Designed for automated and remote testing, they are ideal for wideband signal generation from DC to 2.5 GHz.**

Link to the product video (4 min):

The compact and lightweight AWGs just use a standard Ethernet/LXI cable to connect to any PC or network. High-resolution 16-bit DAC technology delivers waveforms with excellent purity and low-noise, making these AWGs ideal for use in stimulus-response or closed-loop type testing situations. Each AWG channel features its own DAC and can be used in single-ended or differential output modes with fully programmable output ranges. In single-ended mode, waveform amplitudes go up to ±500 mV into 50Ω, in differential mode they go up to ±1 V into 100Ω. With high impedance termination, the output levels are doubled, offering up to ±2 V.

Spectrum now offers 35 variants of the generatorNETBOX, so that customers only pay for the features they need. Signal generation made easy & cost effective!

Available in single- or dual-channel configurations, the DN2.63x models include 2 GSamples (4 GB) of standard memory, expandable to 8 GSamples (16 GB). This enables long waveform playback - up to 800 ms at 10 GS/s - without interruption. Users can select between several smart trigger functions and generation modes, including single-shot, repeated, multiple replay and FIFO streaming. The FIFO mode enables new data to be uploaded to the AWG while replaying a stored waveform.

Each unit comes with Spectrum's SBench 6 software for waveform creation, control, and analysis. Customers can define waveforms from equations, use the built-in function generator, or import data from digitizers, oscilloscopes, or simulation tools. For custom development, SDKs are included for C++, Python, MATLAB, LabVIEW, and more.

10 GS/s output rate, up to 2.5 GHz bandwidth, 16-bit resolution and single-ended or differential outputs.

Integration into automated systems is seamless with front panel connectors for external clock and trigger signals, as well as multi-purpose I/O lines serving as marker outputs, for status flags, or synchronous/asynchronous signaling. A digital pulse generator option is also available. Weighing under 7 kg and with optional rack-mount kits, these units are ideal for mobile, benchtop and rack-based setups.

These new ultrafast AWGs are the latest additions to Spectrum's generatorNETBOX lineup, which now comprises 35 different

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models from 40 MS/s to 10 GS/s. All NETBOX units include a 5-year warranty, free lifetime software/firmware updates, and support directly from Spectrum's design engineers.

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 over 35 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, and is 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

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