

Multi-channel AWGs solve cost problem of signal generators

Spectrum Instrumentation launches their first AWG with 48 synchronous channels

Grosshansdorf, Germany – 16. October 2019. Designed for engineers and scientists that need to simultaneously generate multiple electronic test signals, Spectrum Instrumentation's latest line of Arbitrary Waveform Generators offers 24 to 48 synchronous channels in a single rack-unit with a very economic cost-per-channel relationship. Ideal for multi-channel automated testing applications, the eight different variants achieve full remote control through a simple Ethernet connection to any PC or local area network (LAN), making them easy to integrate into almost any test system. The units feature state-of-the-art 16 bit digital-to-analogue converter technology and combine this with low-noise flexible outputs, allowing them to generate almost any test signal in the DC to 60 MHz frequency range.

Spectrum's new DN6.65x series of generatorNETBOX instruments are available with 24, 32, 40 or 48 fully synchronous channels, complementing the recently introduced and smaller DN2.65x products (that offer from 4 to 16 channels). Such a high channel count sets a new standard for AWGs (most conventional products only offer 1, 2 or 4 channels), while also delivering a very advantageous price per channel. Furthermore, setting up, programming and controlling a single instrument is much simpler than trying to build and operate any multi-channel system that needs to employ a number of individual AWG instruments.

Outstanding waveform generation

To handle different signal generation requirements, users can select from models that offer output rates of either 40 MS/s or 125 MS/s. Each channel has its own DAC that's synchronously clocked using a phase locked loop (PLL) control system. The reference clock as well as a direct clock can be fed-in externally. Four different filters are available to optimize the output signal quality and to help ensure excellent dynamic performance. For example, Noise Spectral Density

(NSD) is as low as -142 dBm/Hz, Total Harmonic Distortion (THD) is down to -74 dB, Signal to Noise Ratio (SNR) is as high as 90 dB and Spurious Free Dynamic Range (SFDR) is up to 97 dB. This high dynamic performance allows users to create and replay the most precise test signals and waveforms.

A wide range of signal amplitudes can be generated with programmable output swings of up to ± 6 V into high impedance or ± 3 V into 50 Ohm. In addition, the units include large on-board memories (up to 6 x 512 MSamples) that can be utilized in a number of different operating modes to allow the generation of long and complex waveforms. This includes Single-Shot, Loop, FIFO and Gated Replay modes.

Multi-purpose connectors and software tools

To aid integration into automated testing systems, the AWGs come complete with front-panel multi-purpose I/O connectors. These give access to synchronous digital (marker) outputs, trigger output, the instruments run and arm status, the PLL reference clock or asynchronous I/O lines.

The new AWGs are fully self-contained and come with all the tools necessary to generate an unlimited variety of waveforms. Simply connect them to a host computer (e.g. laptop or workstation) or anywhere on the corporate network and start up Spectrum's SBench 6 Professional software. SBench 6 Professional is included as standard with every unit. It lets you control all the operating modes and hardware settings from a simple, easy-to-use, graphical user interface. The software also has a host of built-in features for waveform creation, data analysis and documentation. These include the EasyGenerator function for producing



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

<http://www.spectrum-instrumentation.com>

standard wave shapes such as sine, rectangular, triangle, saw-tooth, SINC and DC. Waveforms can also be created from equations, imported from other devices (such as digitizers and oscilloscopes) or other software programs. SBench 6 Professional even allows data import and export in the most popular formats such as ASCII, binary and WAV.

The DN6.65x series of generatorNETBOX instruments are available for immediate delivery and come with Spectrum's full 5-year-warranty.

About Spectrum Instrumentation

Spectrum Instrumentation, founded in 1989, uses a versatile modular design to create a wide range of digitizer and generator products as PC-cards (PCIe and PXIe) and stand-alone Ethernet units (LXI). In 30 years, they have 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 known for their 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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