

# Siglent Delivers 12-Bit Oscilloscopes to address Signal Fidelity Challenges on every bench

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February 28th, 2024: SIGLENT is excited to unveil three new series of oscilloscopes designed to improve signal fidelity, visualization, and analysis. These latest additions complete our lineup of oscilloscopes, each equipped with advanced 12-bit analog-to-digital converters (ADCs) and designed for signal quality. With bandwidths ranging from 70 MHz to 4 GHz, Siglent's high resolution oscilloscopes now provide outstanding signal fidelity for a wide range of applications including power, EMI, frequency analysis, embedded design, and failure analysis.

## Design for Signal Quality

These oscilloscopes provide a combination of low noise, gain accuracy, and channel isolation that deliver capability and value to the engineer on the bench. The [SDS800X HD](#) and [SDS1000X HD](#) are all typically specified at just 70  $\mu$ Vrms noise at 200 MHz bandwidth. Across all of SIGLENT's high resolution oscilloscopes, the lower ranges are specified at 1.5% DC gain accuracy with the ranges  $\geq 5$  mV/div having a leading 0.5% accuracy. [The SDS3000X HD](#) series offers up to 60 dB of channel-to-channel isolation. From 70 MHz and up, engineers looking to solve difficult signal fidelity challenges can now get performance capabilities at an incredible value thanks to SIGLENT's focus on signal quality and design.

## Visualization

In order to maximize the benefits of high-resolution vertical acquisition, Siglent's oscilloscopes enable simultaneous zooming in both the horizontal and vertical directions on live signals. This, coupled with the advantage of high memory depth, facilitates extensive analysis and reveals numerous insights that are typically hidden. This works closely with a broad set of ranges designed with high offset capability. This enables engineers to discover smaller signal anomalies further away from ground by focusing the ADC on



smaller areas of interest and bringing these signals into focus. The combination of range and zoom capability gives an engineer unmatched power to view and analyze small signal detail. When visualizing signals in the RF space, the ability to calculate deep memory FFTs on low noise, 12-bit data provides additional methods for debugging and analyzing high speed signals.

#### **Extensive Functionality**

An additional high-resolution mode, called ERES, provides even further noise reduction and flexibility. The equivalent of up to 4 extra bits of resolution are available on the SDS3000X HD. Utilizing the high sample rate and deep memory, this mode further improves noise performance at the expense of bandwidth enabling engineers to optimize their oscilloscope's performance for any application.

All models are equipped to measure more than 50 parameters, support simultaneous mathematical operations across four channels, and feature a formula editor enabling nested formulas. Additionally, all three oscilloscope series support functionalities like Mask Test, Bode Plot, Power Analysis, Search, and Serial Decode. Optionally, 16 digital channels can be added to enable analysis of mixed signal designs. Together with Siglent's isolated signal generator SAG1021I or any SIGLENT arbitrary waveform generator, loop response test can be carried out to provide the frequency response curve of the device under test. With this the gain and phase of each frequency point can be easily obtained. Meanwhile, with the help of data list, cursor measurement and automatic measurement functions, the Bode plot curve can be analyzed in detail.

The three new oscilloscopes all have high-definition touch screens (7" or 10.1"), advanced web control, and network drive data capabilities. The combination of an intuitive user interface with multiple one-button operations on the front panel and seamless remote access greatly improves the operating efficiency in any use mode.

Combined with our SDS2000X HD and SDS7000A series, SIGLENT has the broadest and most complete portfolio of high-resolution oscilloscopes currently available ranging from 70 MHz to 4 GHz. The focus on signal quality, visualization tools, and capabilities means that regardless of the application, SIGLENT has a performance oscilloscope to deliver signal fidelity at an incredible value.

#### **About Siglent:**

SIGLENT TECHNOLOGIES started in 2002 with the development of their first oscilloscope. Now, the portfolio has rapidly expanded to cover many areas of general-purpose test instrumentation, including oscilloscopes, signal and function generators, digital multimeters, lab power supplies, electronic DC-Loads, spectrum analyzers, VNAs, and RF-signal generators.

With the Performance Series "A-Line" introduced in 2021, Siglent is advancing their technical solutions to address some of the most demanding applications up to 40 GHz. Today SIGLENT TECHNOLOGIES is a global leader producing electronic test and measurement equipment that combines innovative features and functionality with a strong commitment to quality and performance. SIGLENT is ISO 9001:2015 and ISO 14001:2015 certified for its product quality and environmental management programs.



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