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Four- And Eight-Channel Oscilloscopes Offer Compact Size, Affordability

Rohde & Schwarz has expanded its MXO oscilloscope portfolio with the compact four- and eight-channel MXO 3 series. The MXO 3 delivers fast and precise advanced MXO technology—previously available only in larger, higher-priced models—in an extremely compact form factor at a more affordable price point. According to the vendor, this oscilloscope allows engineers to see more of their device under test's signal than any other instrument in this class.

The MXO 3 series oscilloscopes are available in both four- and eight-channel models, with bandwidth options including 100 MHz, 200 MHz, 350 MHz, 500 MHz, and 1 GHz. According to the vendor, the starting price for the eight-channel models sets another industry benchmark for affordability at just EUR 12,500 while the four-channel models start at EUR 5,350 (see the figure).

All MXO 3 oscilloscopes come standard with up to 99% real-time capture, which is up to 50 times better than competitors' instruments, says the vendor, enabling users to instantly see more signal details and rare events.

Like other MXO models, these oscilloscopes leverage MXO-EP processing ASIC technology to deliver the following specifications, which it describes as industry bests:

- 4.5 million acquisitions per second, allowing users to instantly detect additional signal detail and infrequent events.
- 600,000 trigger events per second with zone triggering, enabling users to isolate events in the time domain, including math and frequency domain signals.
- 50,000 FFTs per second, said to be up to 1,000 times faster than other oscilloscopes, providing faster and more-comprehensive analysis for applications such as EMI and harmonic testing.
- 600,000 math operations per second, said be up to 100,000 times faster than competitive models, allowing users to accurately analyze signals like power, which require multiplication of voltage and current.

All MXO 3 models also feature 12-bit vertical resolution in hardware at all sample rates. This allows users to observe small signal changes even of larger signals, providing 16 times more resolution than traditional 8-bit oscilloscopes.

Meanwhile these models additionally include an HD mode that enhances signal details that would otherwise be buried in noise. It offers both noise reduction and up to 18 bits of vertical resolution, the highest in the industry, according to the company. HD mode operates at full sample rate and is implemented in hardware, ensuring precision without sacrificing speed.

And with what's described as the largest offset range in its class, MXO 3 users can take advantage of the most sensitive vertical scale setup to reveal more of their signal while minimizing measurement system noise. MXO 3 oscilloscopes feature a wide ±3-V offset at 1 mV/div on both 50-Ω and 1-MΩ input paths—two to three times better than other leading models in this class.

Both the four- and eight-channel MXO 3 oscilloscopes are designed with a compact, portable form factor, making them easy to fit anywhere even on crowded benches. Other features supporting usability are an 11.6-in. full-HD capacitive touchscreen, light weight (4 kg), 5U rack height, and VESA mounting.

Upgrade options include 16 integrated digital channels with a mixed signal oscilloscope (MSO) option, a 50-MHz arbitrary waveform generator, protocol decoding and triggering options for numerous industry standard buses and—of particular interest to power supply designers—a frequency response analyzer.

The MXO 3 series oscilloscopes are part of the R&S ESSENTIALS portfolio and are available now from Rohde & Schwarz and selected distribution channel partners. For more information, see the R&S MXO 3 Oscilloscope page. Or contact the company.

Figure. Philip Diegmann, vice president of Oscilloscopes at Rohde & Schwarz, says, "With the launch of the MXO 3, we are bringing the breakthrough capabilities of our MXO technology to a more accessible, smaller instrument class. This compact oscilloscope delivers the same cutting-edge performance and usability that our customers have come to expect, while opening up new possibilities for engineers at a variety of price points, especially with the addition of an eight-channel model—the only instrument of its kind in this class."