

# Variable bandwidth per voucher

**The HMO1002 digital oscilloscope from Rohde & Schwarz (Germany) features a high waveform update rate and high vertical sensitivity. It is available with bandwidths of 50 MHz, 70 MHz, and 100 MHz, depending on the user's needs.**

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The model is equipped with a mixed signal functionality with no software option necessary to unlock it (Photo: Rohde & Schwarz)

THE FAN-LESS INSTRUMENT offers a sampling rate of 1 Gsample/s and a memory depth of 1 Msample and includes a mixed signal function. The separately available logic probe is not coupled to a specific instrument and can be used with all HMO oscilloscopes. For communications between embedded systems and the environment, the oscilloscope includes hardware-based signal triggering and decoding for protocols like I<sup>2</sup>C, SPI, UART, CAN and LIN. This option has to be activated with an upgrade voucher. Available CAN trigger types include Frame Start, Frame End, Identifier, Data, and Error at up to 50 Mbit/s.

The oscilloscope offers 128 K test points and analysis functions in the frequency domain. The time domain signal, measurement window, FFT analysis range, and measurement result are displayed on a single screen, which makes it easier to measure the spectra. The oscilloscope offers time domain, logic, protocol, and frequency analysis. Depending on the user's requirements, the regular bandwidth can be upgraded from 50 MHz to 70 MHz or 100 MHz. This is also done with upgrade vouchers, which can be purchased at the dealer either together with the instrument or anytime thereafter.

The integrated pattern generator for generating protocol messages at up to 50 Mbit/s is suitable for embedded users. In addition to using predefined messages, developers can program their own signal patterns for supported serial protocols. The integrated three-digit digital voltmeter enables technicians to simultaneously perform voltage measurements on both analog channels with two values each. The function generator that generates different types of signals with frequencies up to 50 kHz is adaptable to educational settings. Trainees and students can use it to learn basic measurement tasks. In education mode, the convenience functions can be switched off.

Analog and digital signals can be measured and analyzed simultaneously. A real life example is the integration of ADCs (analog digital converter) or DACs (digital analog converter). In this case, the mixed signal technology allows users to determine latency periods by means of a simple cursor measurement. Therefore a MSO allows developers to devote their full attention to the circuit without having to waste energy on the measurement setup.