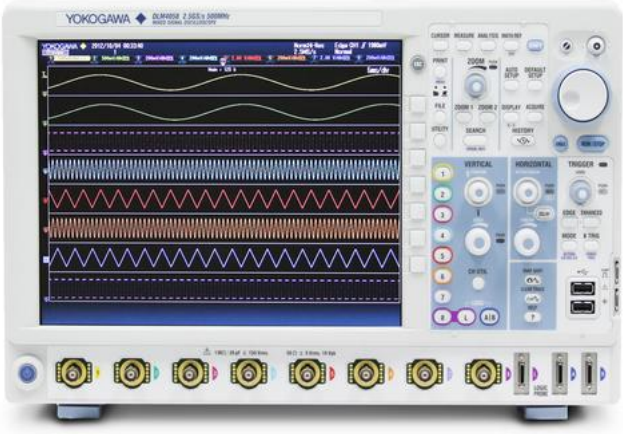
Eight-channel mixed-signal oscilloscope ideal for testing, debugging applications



The new Yokogawa DLM4000 is the industry's only eight-channel mixed- signal oscilloscope. Combining the large screen and eight-channel capability of Yokogawa's earlier eight-channel DL7480 oscilloscope with the mixed-signal technology of the company's pioneering DLM2000 Series, the new instrument is ideally suited to test and debug applications in the embedded systems, power electronics, mechatronics and automotive sectors.

The DLM4000 Series is comprised of two models with bandwidths of 350 and 500 MHz and a sampling rate of 1.25 GSa/s (gigasamples per second), expandable to 2.5 GSa/s with interleaving. The inputs can be allocated as eight analog channels or seven analog channels, plus one 8-bit digital input. A future logic-expansion option will offer sixteen additional channels of logic for a total of seven channels of analog input with simultaneous 24-bit digital input.

The new instruments feature exceptionally long memory (up to 62.5 M points per channel and 125 M points in interleave mode), allowing both long recordings and multiple waveforms to be acquired. A history memory function, which does not reduce the oscilloscope's high waveform acquisition rate, allows up to 20,000 previously captured waveforms to be saved in the acquisition memory, with any one or all of them displayed on screen for cursor measurements to be carried out. Waveforms can be displayed one at a time, in order, or automatically played back, paused, fast-forwarded or rewound. The history memory in combination with the advanced waveform search features enable users to capture and see the details of anomalies on individual waveforms when their characteristics are still unknown.

Advanced measurement and analysis features include histogram and trending functions, digital filtering, zoom windows, user-defined mathematics and serial bus analysis.

The instruments incorporate a large (12.1-inch) high-resolution XGA display, and yet are housed in a compact body, which is less than 18 cm deep and weighs just 6.5 kg, similar to smaller 4-channel oscilloscopes. The display is enhanced by a fine grid, high luminance and viewing angle, and on-screen markers with simultaneous display of cursors and automatic parameters. Other features include backlit buttons, additional knobs and jog shuttle, on-screen information in English, German, French, Italian and Spanish languages, two zoom windows with 80:20 or 50:50 zoom/main area split, and a choice of first-cycle or screen average mode for frequency measurement.

The DLM4000 Series comes with a variety of easy-to-configure triggers combining analog and logic inputs such as edge, enhanced and B-triggers. These include dedicated trigger functions for FlexRay, CAN, LIN, UART, I2C and SPI serial bus patterns, as well as the ability to perform simultaneous analyses on two different buses operating at different speeds. This capability is enhanced by the extensive search facilities, allowing the user to look for specific data in the very long memory.

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