

# DLM3000 Mixed Signal Oscilloscope

## Precise measurement with touchscreen operation

The DLM3000 integrates the latest in touchscreen operation, solid-state storage and high speed signal processing. It enhances productivity by providing clean signals, extensive processing, and ease of operation.

## Precision Making



### DLM3000 Mixed Signal Oscilloscope

#### Productivity at your fingertips

The DLM3000 offers valuable measurement insights to engineers involved with electric circuit design in the following areas.

- Hybrid and electric vehicles
- In-vehicle serial buses
- Motors and drives
- Office appliances
- Power supply (Inverter, UPS, DC-DC)
- Consumer electronics

- 200, 350 MHz and 500 MHz bandwidths
- Up to 2.5GS/s sample rate with all 4 channels used
- Up to 500 MPoints memory
- Sensitivity from 500uV/div to 10V/div

#### Compact housing

The DLM3000 is housed in a compact package with a portrait format. Its footprint is approximately two-thirds the size of an A4 sheet of paper to save space on the desk or test bench.

#### Flexible MSO input

Choose to capture a mix of analogue and more digital signals. With a push of a button, channel 4 converts into 8 digital inputs and the DLM3000 becomes a mixed signal oscilloscope. This makes it possible to view 3 analogue and 8 digital signals simultaneously. As a result, up to 11 input signals can be observed simultaneously to analyze both analogue, control and logic signals

#### Easy to configure 8.4-inch touchscreen

The combination of the interactive 8.4-inch capacitive touchscreen interface with a traditional oscilloscope control panel allows users to seamlessly transition between the two modes of operation. Users can automatically or manually split the display to separate individual channel waveforms while maintaining their full dynamic range, which makes the DLM3000 one of the simplest scopes to set up while maintaining full detailed insights of the desired signals irrespective of the number of channels used.

## Two independent zoom windows

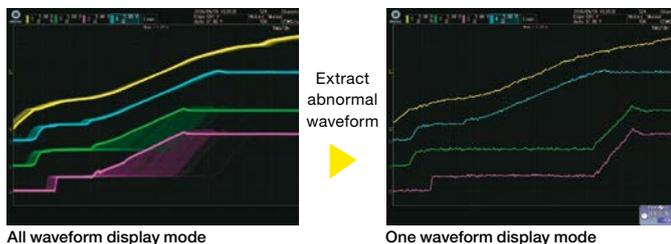
Combined with the advanced search and cursor/parameter measurement capabilities, the two zoom windows enable users, for example, to see the waveform detail of two parts of the acquisition which can be separated by a long time period. It is thus possible to quickly find, measure and analyze the details of the cause and effect of an anomaly which could be on the same or different input channels.

## Long waveform memory up to 500 MPoints

The two advantages of a long waveform memory are the ability to capture for longer periods of time and to be able to maintain high sample rates and hence higher effective measuring bandwidths. Using a short memory means that sample rates will be lower in order to make an acquisition for the same period of time. When the maximum memory length is not selected, the history memory is automatically enabled.

## History memory and high-speed acquisition

With faster acquisition rates there is a higher chance of seeing an anomaly when it occurs. The DLM3000 has a maximum continuous acquisition rate of 400,000 waveforms/second. Moreover, the DLM3000 is able to use its history memory to automatically save up to 100,000 previously captured waveforms and subsequently display just one or overlay all of them on screen. Anomalies in wave shapes can therefore be easily recognized, isolated and further analyzed.



Example: Various search methods are available to search up to 100,000 waveforms for events

N.B. Some features are not available on 2 channel models. Please consult the bulletin for details.

## Why choose the DLM3000?

**Quality** – DLM3000 features lower residual noise, extensive voltage ranges and a variety of real-time lowpass filters to ensure the fidelity of your signals.

**Flexibility** – Channel count and memory depth options combined with optional Power Math and serial bus features ensures usage for a variety of needs.

**Usability** – The combination of a touchscreen with a traditional panel of oscilloscope controls allows users to seamlessly transition, while communication and storage options make it easy to access large data sets.

## Vehicle Serial Bus Analysis

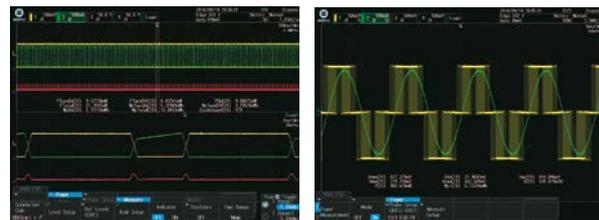
From automotive braking systems to car navigation, serial buses are used to establish communication between ECUs, sensors and actuators. The DLM3000 supports FlexRay, CAN, CAN FD, LIN, SENT, UART (RS232), I2C, SPI and CXPI serial bus patterns as well as the ability to simultaneously analyze up to four different buses operating at different speeds. The unique auto setup function analyzes the input signal and will automatically set the appropriate trigger and decoding settings, such as bit rate and threshold levels.

## Power measurement

The oscilloscope can be used as a power meter by providing automated measurement of power parameters for up to two pairs of voltage and current waveforms. These values can then be statistically processed and calculated to provide peak, average and root-mean-square values, along with many other parameters such as power factor and q-factor.

## Power supply analysis

Using the long memory, the switching loss of the voltage and current waveforms can be computed over long periods. Joule integral (i2t), SOA (safe operating area) and harmonics based on EN61000-3-2 can also be measured and analyzed.



Example: Switching loss analyses automatically

Example: Measure power parameters

[tmi.yokogawa.com](http://tmi.yokogawa.com)

Aufgrund laufender Weiterentwicklungen sind Änderungen der Spezifikationen vorbehalten. Alle Angaben vorbehaltlich Satz- und Druckfehler.

v181024