LeCroy WaveSurfer MS Series
Mixed Signal Oscilloscopes

The Ultimate Mixed Signal Oscilloscope

A mixed signal oscilloscope (MSO) is the ideal tool for the design and debug of today's embedded systems providing the only way to see analog, digital and serial data signals simultaneously on one instrument as they occur in real time. Embedded system designers need to view signals into and out of devices such as microcontrollers, DSPs, FPGAs,ADCs, DACs, and transducers while ensuring proper timing and bus traffic.

Unmatched Digital Performance

The MS Series offers unmatched digital performance and is available in two models, the MS-500 and MS-250. Designed to capture long records of the fastest digital signals the MS-500 has a maximum input frequency of 500 MHz, while other MSOs are limited to only 250 MHz. The long memory of 50 Mpts/Ch means that these fast signals can be captured for up to 25 ms at up to 2 GS/s sampling rate. On top of this raw performance, the MS-500 supports up to 36 channels — enough for all the ADDR, DATA, control lines and serial data busses. This makes it the perfect tool for embedded systems with 16-bit or 32-bit microcontrollers.

The MS-250 is the ideal tool for testing embedded systems with 8 bit microcontrollers or slower digital signals. With 250 MHz max input frequency, 18 channels and 10 Mpts/Ch memory the MS-250 is an outstanding value and provides a complete set of tools for embedded system testing.

Analog Performance Reimagined

A great MSO must be built on a great oscilloscope and the WaveRunner® Xi and WaveSurfer® Xs are two of the best. With bandwidths from 200 MHz to 2 GHz, sampling rates up to 10 GS/s, 12.5 Mpts/Ch available memory, and a wide range of math, measurement and triggering capabilities the WaveRunner Xi and WaveSurfer Xs platforms are powerful and versatile. Both models feature a big, bright 10.4" color touch screen for easy viewing of all your analog and digital signals and both are only 6" deep.

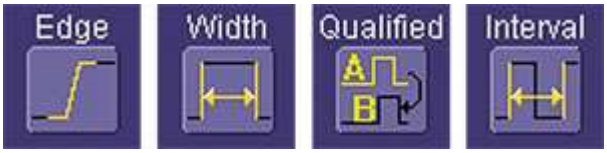
The Best Serial Data BusTesting

Monitoring serial data busses is a major part of embedded system design and test. The ability to quickly locate and isolate specific messages on these busses is important for efficient testing. With LeCroy's unique colorcoded overlay for decoded bus data and powerful, flexible conditional

triggering, the MS Series captures all important bus traffic in your system and easily shows important data messages from I2C, SPI, UART, RS-232, CAN, and LIN busses.

Analog, Digital and Cross-Pattern Triggering

The WaveRunner Xi and WaveSurfer Xs oscilloscopes come with an extensive set of triggering capabilities aimed at capturing a wide range of analog signals. With the MS Series this triggering is enhanced, adding analog/digital crosspattern trigger, analog/digital event triggering and the capability to select any digital channel as the source for an analog trigger.

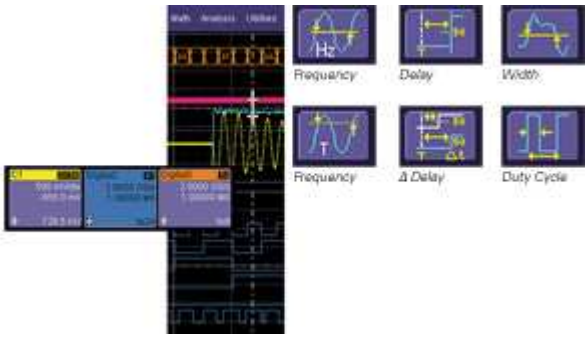


Use the oscilloscope triggers with digital channels

Set up a simple or complex cross-pattern trigger with any combination of up to 4 analog and 36 digital channels. Set pattern with a choice of 1, 0, Rising Edge, Falling Edge, Either Edge or Don't Care conditions.

Easy-to-Use Measurement Tools

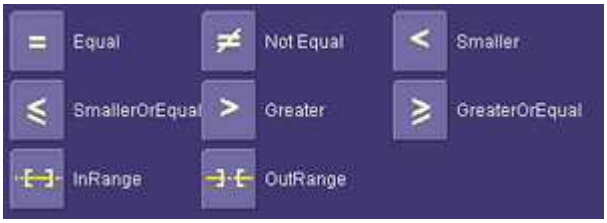
Cursors and measurement parameters are an important part of any oscilloscope. When using the MS Series these tools measure digital channels as well analog channels. Cursors read out hexadecimal bus values while parameters make timing measurements on a single digital channel, between two digital channels or even between an analog and a digital channel.



Use oscilloscope tools like horizontal and vertical cursors along with automatic measurements and statistics to measure analog and digital signals.

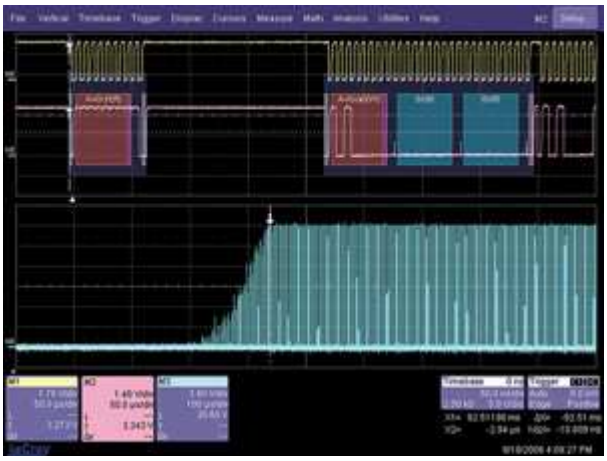
Complete I^{2}C, SPI, UART, RS-232, LIN, and CAN Serial Triggering

Quickly and easily isolate specific serial data events on your embedded controller for better understanding and faster debug. Set up trigger conditions in binary, hexadecimal (Symbolic for CAN) formats. Use the MS-500 or MS-250 to capture serial data busses keeping the analog oscilloscope channels open for other uses. Trigger on DATA in specific locations of long I2C EEPROM reads. Get complete control of your debug process and finish faster.



Powerful Conditional Data Triggering

Completely isolate specific message events for better understanding and debug. Use a conditional I2C, UART, RS-232, or LIN DATA trigger to select a range of DATA values to trigger on, not just a single DATA value. Oftentimes, I2C utilizes DATA bytes to specify sub-addresses for accessing memory locations in EEPROMs. Conditional DATA trigger allows triggering on a range of DATA bytes that correspond to reads or writes to specific subaddress memory blocks in the EEPROM. Conditional DATA triggering can also aid in monitoring DATA outputs from sensors, such as analogto- digital converters, and triggering when DATA is outside a safe operating range. In both cases, verifying proper operation becomes a simple task.



Intuitive, Color-Coded Decode Overlay

Advanced software algorithms deconstruct the waveform into binary, hex, or ASCII protocol information, then overlay the decoded data on the waveform. Various sections of the protocol are color-coded to make it easy to understand. The decode operation is fast— even with long acquisitions.

Table Summary and Search/Zoom

Turn your oscilloscope into a protocol analyzer with the Table display of protocol information. Customize the table, or export Table data to an Excel file. Touch a message in the table and automatically zoom in for detail. Search for specific address or data values in the acquisition.

Distribué par LGDA-Technologies BP266 13797 AIX EN PROVENCE Cedex3

Tél : 04 42 38 72 57

Contact : lgda-technologies@wanadoo.fr site http://www.lgda-technologies.com