

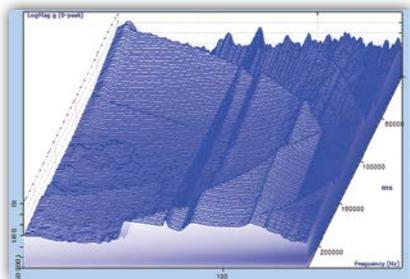
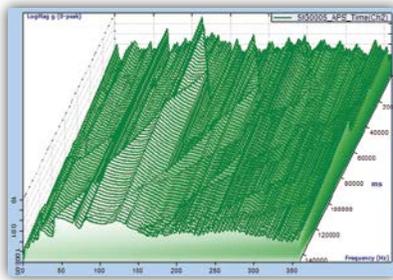
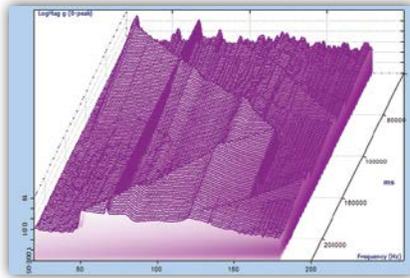
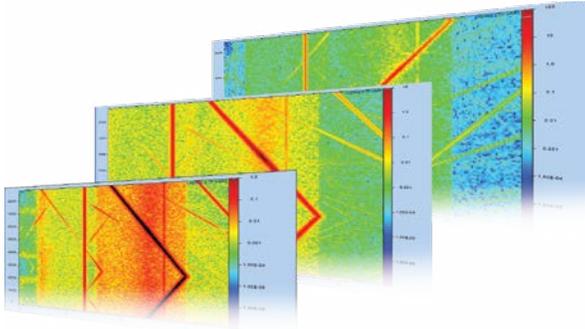


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DYNAMIC SIGNAL ANALYSIS & DATA ACQUISITION

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Acquisition Mode includes free-run, continuous after trigger, single shot with trigger, single shot without trigger, auto-arm trigger and manual-arm trigger.

Multi-Resolution Spectrum provides the ability to use different spectral resolutions at low frequencies and high frequencies within the same spectrum. When analysis requires a denser frequency resolution in the lower frequencies compared to the higher frequencies, multi-resolution spectrum can be used. The need for a higher block size (for better frequency resolution) is eliminated because the spectral resolution is eight times higher below the user selected cut-off frequency.

Variable Sampling Rate in the FFT Analysis provides a convenient way to select sampling frequencies of each module in a high channel count system. Measurement quantities such as strain, temperature or pressure often require a much lower sampling rate when compared to acceleration or sound pressure. The variable sampling rate could be efficiently used to select a user defined sampling rate for each front-end while acquiring synchronized data from all channels in the system.

3D signal waterfall displays are available for block signals in all types of tests. 3D signals can be plotted with reference to Time or RPM (when tachometer input is available). User customizable trace number and reference axis settings are available for both Time and RPM reference axes.

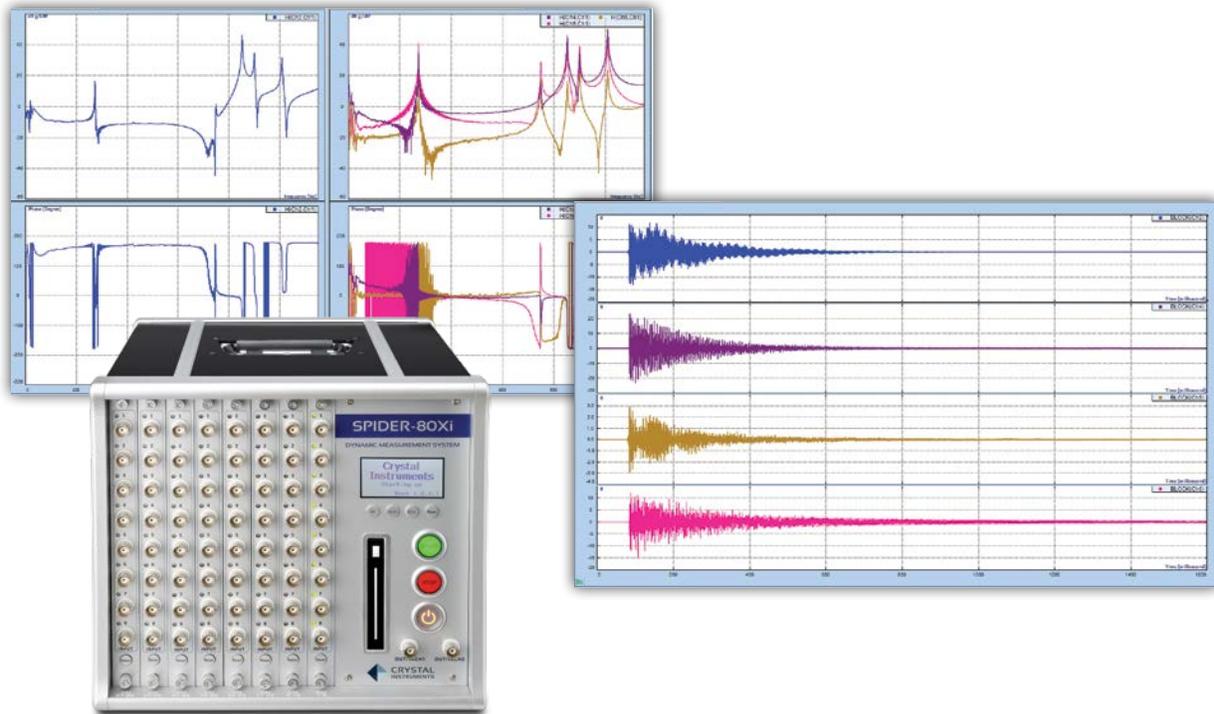
With Spider some statistics signals can be computed and recorded into PC with "infinite time". **RMS:** apply RMS estimation to an input data stream and generate a continuous output time stream; **Peak:** extract the peak or peak-peak value over a period of time and generate a time stream.

Math Functions applied to the signals includes operations such as abs, +, -, *, /, square, square-root, log, and offset scale.

Test Sequence creates a list of tests and run them sequentially. Test sequences can be initiated and controlled by a user command, digital input event, or Windows socket message.

Send Emails and IM as Event-Actions is the ability to send emails or instant messages as custom actions in response to a system or user event. Content of emails can be customized.

Remote Operation Communication using Socket Messages allows to communicate with and control Spider systems remotely with Window socket messages. Socket messages also allow communication with other hardware, such as temperature chambers. Please refer to the Socket Message document for detailed specifications.



The Spider has strong System Failure Protection. With its **Power Loss Emergency Shutdown**, when a power loss is detected, the system will save all test data into non-volatile flash memory and safely shut down. With its **Ethernet Connection Loss Detection**, when a network loss is detected, the system can be configured to either save all data and ramp down the test or continue running the test in Black Box mode.

Each Spider has 4 pair of **DIO** ports which is used to send and receive low level electrical signals to and from other devices to coordinate their operation during a test.

The **output channels** provide signal sources and generate user determined waveforms. Multiple output channels may generate signals independently or simultaneously. The Spider-80X is equipped with two output channels but only one is enabled. An option (S80-P09) is available to enable the second output. Output Types include Sine, Triangle, Square, White noise, DC, Chirp, Swept sine, Arbitrary waveform, Shaped random, Playback

The **EDM App for iPad** by Crystal Instruments is available from the Apple App Store. The EDM App allows access to the Spider-80X front-end when operating in Black Box mode. Users will be able to access a preloaded test on their iPad to run and control the Spider-80X as long as they are within the range of a wireless network. The display window shows one or multiple signals. Users can print or email screen shots.

With Spider the software can compute the **SRS** for all channels using maxi-max, maximum negative, and maximum positive analysis techniques. A reference profile is available.