Data Recording, Playback, Review and DSA

Engineered for SignalCalc Dynamic Analyzers

- ACE
- Mobilyzer
- Savant
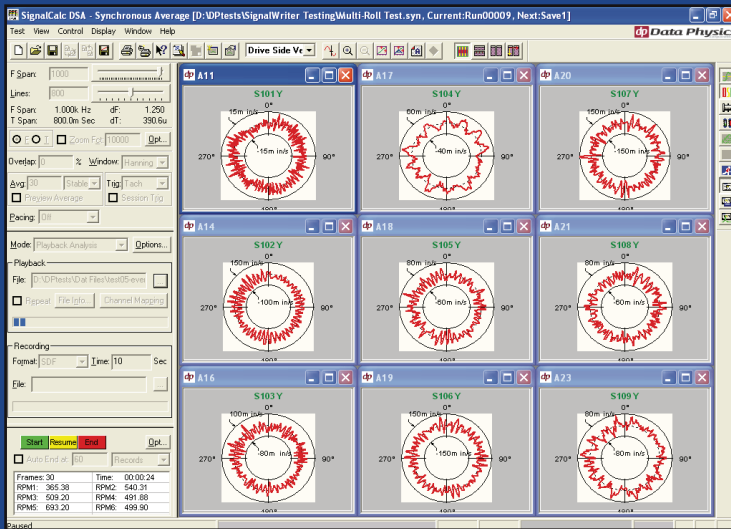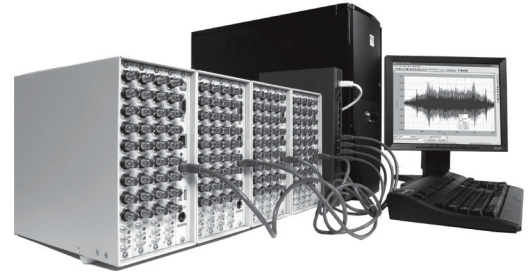
Simultaneous Data Acquisition

Until recently, the process of acquiring, recording, analyzing and reporting test data was cumbersome and inefficient. This was primarily due to the fact that most signal analyzers did not have the ability to record vast amounts of data digitally, analyze recorded data in post process mode and create reports easily - all on a single platform. SignalCalc Dynamic Signal Analyzers provide the ability to simultaneously acquire data, record this data to either a host computer or an internal storage disk, and perform realtime measurements on the live data. Recorded data can then be post processed repeatedly using a frequency bandwidth equivalent to or lower than the original recording bandwidth. This important feature is vital for users who wish to be able to modify and hone their analysis settings as they learn more from the recorded data.

Measurement parameters such as triggering, windowing, overlap and averaging, may be changed in an unlimited set of combinations, enabling users to appreciate subtle characteristics of the recorded data, and perform a thorough analysis of the system under test. Analyzed data can be reviewed in the same environment and conveniently exported to Microsoft Word, etc., making for easy reporting.

Throughput Recording

SignalCalc analyzers provide high-speed, high-capacity recording to disk, achieving aggregate throughput rates up to 20 MB/sec to the internal hard disk in the Abacus chassis. All recorded data may be post processed by any measurement suite in the analyzer. Tachometer data from all enabled tach channels may also be recorded simultaneously with input data so that post process order analysis or RPM-based measurements may be made easily.

In parallel with recording to disk, data may be processed and displayed in any of the available analysis modes. Recording data with the SignalCalc family is easy - the user only needs to specify a file and location, and the maximum duration of the recording. This is limited only by the amount of hard disk space available.

Autonomous Recording

Mobilyzer and Savant analyzers provide autonomous local bus disk throughput recording. Incoming data is split into two separate data streams, one for measurement, and the other for recording. Measurement analysis and throughput recording occur simultaneously, but can be controlled separately. This means that the initiation of a data recording may be started independently from the start of a given measurement. Advanced digital technology in the hardware also allows both functions to be simultaneously performed at different sampling frequencies. This remarkable, ground breaking capability is a blessing for users who want to capture data at a sufficiently high bandwidth covering all signal characteristics for a given application, but who generally need to perform the bulk of their measurement analysis at a lower bandwidth.

Playback DAC

Recorded signals may be used as arbitrary waveforms via a DAC channel. This is particularly useful when examining a laboratory structure's response to field recorded stimuli. The Abacus hardware provides up to 32 input channels of data and 8 output channels in a single chassis. Therefore, any 8 of the 32 recorded

channels may be reproduced as arbitrary waveforms by selection through a channel mapping interface. When Repeat is activated, the selected time-histories are played from beginning to end and are then immediately repeated until the End button is pressed.
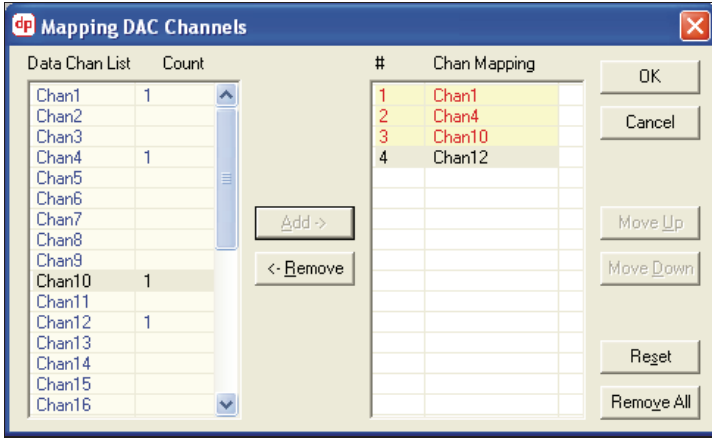
Playback Analysis

Compressed displays of recorded data provide an excellent means of viewing the complete signal. Cursor and zoom facilities enable users to selectively review details of the signal and position the starting and/or stopping point for analysis or playback to DAC using convenient markers (M1,M2).

Voice Recording and Playback functionality is featured in Mobilyzer and Savant analyzers. This feature allows users to set up one (or more) of the input channels to record voice tracks as a commentary of the test in progress. During playback the voice recording may be used as a cue channel to identify significant events guiding the playback analysis process, and removing the need to maintain hand written notes for future review.

Review

Time, frequency or octave domain measurements processed using any of the SignalCalc analyzers are stored in a native binary format (*.sig). These files can be reviewed offline and users may make changes to display format (including axis limits, trace colors, etc.), engineering units and add custom annotations for reporting purposes. Graphics and test data can be easily copied into Microsoft Word, Excel or PowerPoint. Alternatively reports can be automated and streamlined using the SignalWriter reporting module. Stored data is available for export to external processing environments in industry standard data formats such as ASCII, Matlab and UFF.

DSA - The Stand Alone Analyzer

Offline, post analysis has been taken to an entirely new level by SignalCalc DSA. With DSA, any digitized time history data can be analyzed without the presence of hardware. Virtually all SignalCalc software application modules are available for use with the SignalCalc DSA module. DSA is identical in appearance, use and functionality to the Mobilyzer and Savant environments in Playback Analysis and Export modes. Users have access to every feature and capability of the software using for example up to 25,600 spectral lines, and exploiting the unrivaled data analysis, graphical annotation, display and signal export capabilities that so many have come to value from the SignalCalc family of analyzers.

Discover more at www.dataphysics.com