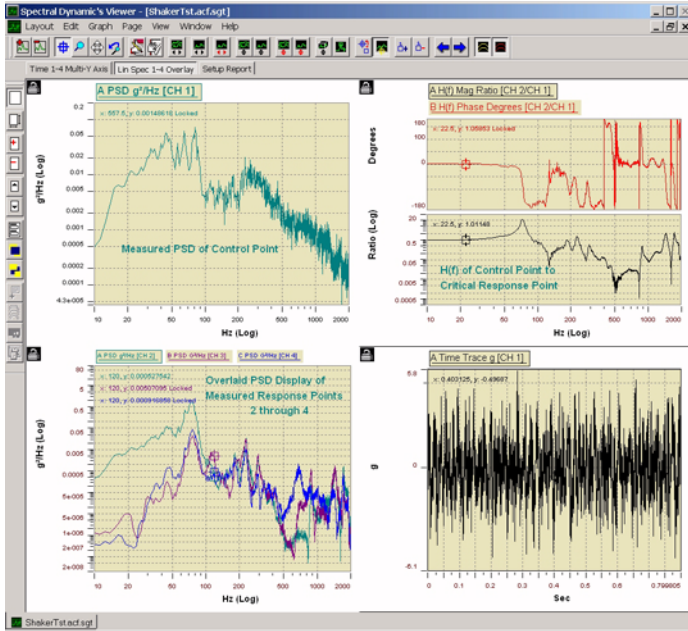




CATS™ Signal Analysis

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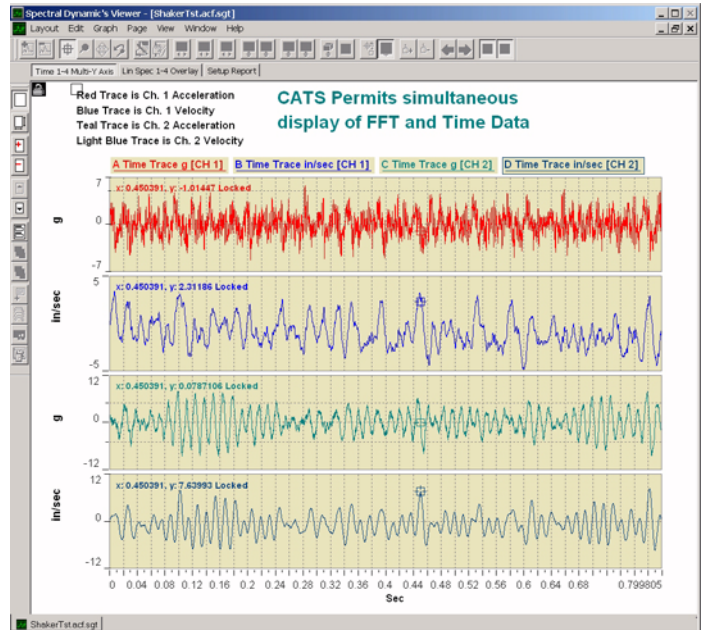


Computer Aided Test Suite (CATS)™ Signal analysis program provides comprehensive data acquisition, signal analysis, Modal excitation, Modal data collection with DOF increment capability, and many more features that make CATS™ Signal the most complete real-time data acquisition and analysis tool available today.

Graphics Performance without EQUAL
Use the built in tools to annotate screens that lead you directly to report ready documentation. Let the pictures talk for you in your reports.

User definable display – Contains time domain, frequency domain, and H(f) displays with each display pane having complete cursor, annotation and graphics control

- Up to 32 simultaneous input channels
- Sample rates up to 102.4 K sa/sec (bandwidth 40,000 Hz – HW Dependent)
- Output generator with random, burst random, sine, and chirp
- Stream time histories to optional SCSI throughput disk at up to 102.4 K s/sec per channel
- Highly versatile GUI
- Math Operations
- Overlay current with historical data
- Customer designed annotation



Time Domain DATA with powerful display capability, LIVE tags to show computed values, or measured amplitude – display g's, velocity, displacement for each trace, or all Time Traces, ALL AT **ONCE!**

Input
 Input channels 4 to 32: all simultaneously sampled
 Input dynamic range 92 dB
 Maximum input $\pm 12V$
 Voltage ranges 17 ranges, 27 mV to 12V full scale, in 3 dB steps
 Overload detection Full scale on all channels, analog and digital detection
 Voltage coupling AC or DC
 ICP power 4 mA (20 V maximum into open circuit)
 Maximum rated input signal ± 35 Volts peak
 Sampling rate 51,200 samples per second
 Frame size 256, 512, 1024, 2048 samples; 4096, and 8192 samples optional (Premier)
 Frame duration 5 ms to 128 seconds

Output
 Output channels 1
 Output dynamics range 90 dB
 Maximum output amplitude ± 12 Volts peak
 Maximum output current 16 mA
 Voltage range attenuator Programmable 48-bit
 Attenuator range 0 to -160 dB
 Sampling rate 51,200 samples per second
Drive signals
 Random Broadband; up to 3 Vrms
 Sine 1 to 10000 Hz; up to 10 Vpeak
 Pseudo random Broadband; up to 3 Vrms
 Sine chirp Fast sine sweep
 Burst random Windowed random burst with variable duration
 User-defined User-defined shaped broadband output

Analysis
 Frequency range (DC to) 50, 100, 200, 500, 1000, 2000, 5000, and 10000 Hz; 20000 Hz optional (Premier)
 Frequency resolution 100, 200, 400 and 800 lines; 1600, 3200 lines optional (Premier)
 FFT windows Hanning, Blackman, calibration, force/impact, and correlation

Averaging
 Types Summation, exponential, continuous, peak hold (max)
 Number 1 to 1000

Triggering
 Modes Free run, automatic, manual
 Source Any Input channel, external trigger
 Threshold $\pm mV$, \pm percent of full scale
 Slope Rising/falling
 Delay Specified in ms or percent of frame
 Pre/Post-trigger duration Specified in ms

Channel Setup
 Channel type Measurement, inactive
 Sensitivity 0.001 to 1,000,000 mV/g or mV/(m/s²)
 ICP power On/Off
 Coupling AC, DC
 Channel label Up to 8 characters for each channel
 Transducer serial number Up to 10 characters for each channel

On-Line Controls
 Start/Stop test Initiates or stops data acquisition
 Auto-range Automatically set Input channel voltage ranges
 Manual Trigger Set trigger to Manual arm mode
 Arm Trigger Initiate trigger threshold detection
 Output Turn output drive signal on/off

On-Line Status Monitors
 Average count Current number of frames averaged
 Channel Status RMS levels for all active channels
 Message log Records all test operations, including operator commands, and reports on any error conditions

On-Line Analysis
 Real-time displays Spectra or time histories for all available channels may be simultaneously, displayed
 Functions analyzed during the test
 Time Windowed and un-windowed
 Auto spectra Linear, PSD
 Cross spectra Magnitude, phase, real, Imaginary
 Transfer functions Magnitude, phase, real, Imaginary, coherence
 Statistical functions Probability density, auto correlation, cross correlation
 1/n Octave 1/3, 1/6, 1/12, 1/24
 Real-time/Stored data Simultaneous display and overlay of spectra or time histories for real-time data and any stored data

Modal Data Acquisition
 Modal DOF Data stored and recalled according to modal DOF label
 Auto increment Automatic incrementing of modal DOF during acquisition
 DOF Table Set up multiple tables of DOF numbers and directions for efficient management of modal data
 Data storage format CATS™ binary format, STAR™ binary, and Universal File Format

Transient Analysis
 Frequency range (DC to) 25 Hz to 10 kHz; dependent on pulse duration and over-sample ratio
 Functions Acceleration, Velocity, Displacement, SRS (Primary+, Primary-, Maxi-max)
 Frame size Automatic selection of 512 – 8192 samples, in powers of 2 steps
 Reference profile User-defined SRS reference

Swept Sine Analysis
 Sweep range User-defined sweep range from 5 to 2000 Hz; 1 to 5000 Hz (Intermediate) and 0.01 to 10000 Hz (Premier) optional
 Sweep resolution User-defined resolution of 450 to 800 points per sweep; 450 to 2400 points per sweep (Premier) optional
 Measurement processing RMS, or tracking filter processing for all channels in parallel; processing type individually selectable for each channel
 Tracking filter types Proportional to drive frequency, 1 to 200% and fixed bandwidth, 1 Hz to 1,000Hz
 Reference profile User-defined reference

Data Storage
 Format Spectral Dynamics binary or Universal File Format
 Setup options Select from all available functions, new data file or append data to file
 Playback Automatic play of entire test data file, with adjustable display update delay; manual selection; select by input channel of modal DOF
 Run message log Text file records all system status messages displayed during test run

Export Manager (Optional)
 File formats STAR™, I-DEAS™, MATLAB™, UFF

Throughput Disk (Optional)
 Sample rate Continuous at 51.2 kHz sample rate per channel on up to 16 channels to limit of throughput disk
 Type SCSI disk drive 10,000 rpm
 Disk size 18, 36, 120 Gbyte, removable



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