CATS RMA

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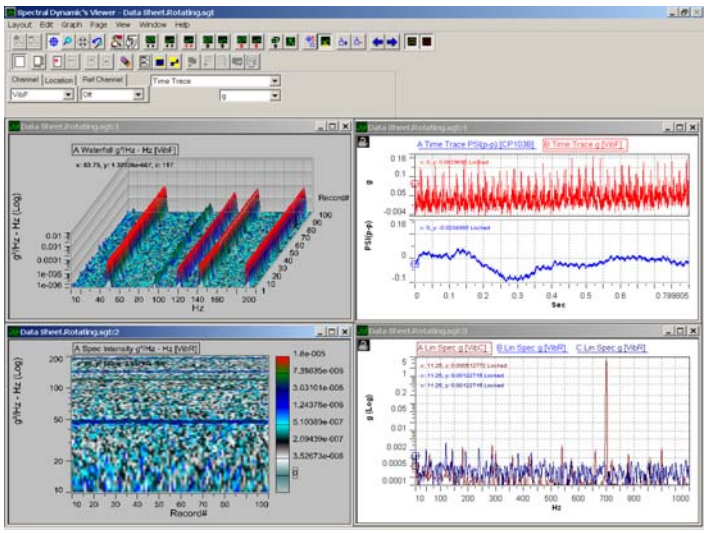
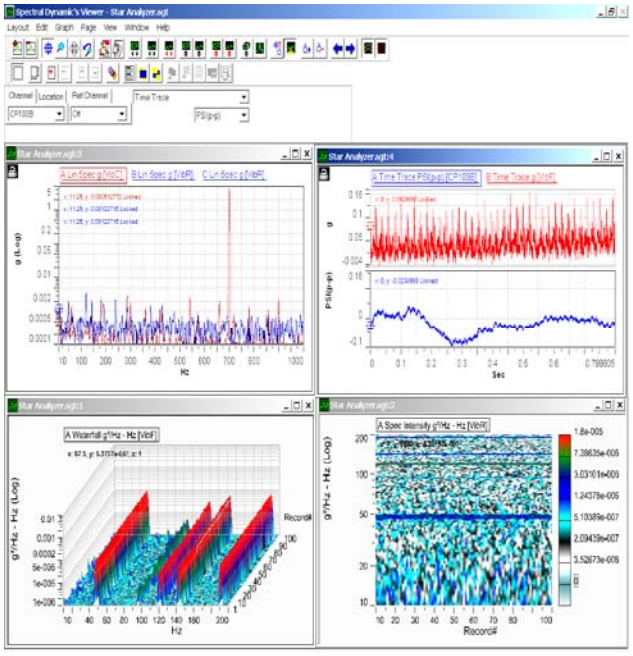


The Computer-Aided Test Suite™ RMA (Rotating Machinery Analysis) package offers unsurpassed acquisition and analysis for variable speed measuring applications. At the heart of this system is a dual input Tachometer board which runs at a clock speed of 100 MHz while utilizing double-buffered counters. This capability allows you to analyze rotors at speeds up to 100,000 RPM at 60 pulses per rev easily. Our ability to simultaneously process the data (fixed or tracked sampling) and perform extensive real time displays, all while simultaneously streaming time domain data to disk, makes this system extremely powerful and unique in the industry.

- Up to 32 simultaneous measurement channels
- Up to 4 separate Tachometer Channels
- Up to 100 MHz input on each Tach channel
- Input Channel sample rates up to 51,200Hz (bandwidth 20,000Hz)
- Frames sizes up to 4,096 points (1,600 frequency lines)
- Stream time histories to optional SCSI throughput disk up to 51,200Hz per channel (gap less)
- Up to five different Gates Available for Controlling Acquisition
- Extensive Real Time Plots



CATS™
Computer Aided Test Suite

Graphics so POWERFUL, the user interface can be simple

SPECTRAL DYNAMICS

Input

Input channels	4 to 32: all simultaneously sampled
Input dynamic range	92 dB
Maximum input	±12V (24bit FE)
Voltage ranges	.44V, 2.5V and 12V (24bit FE)
Overload detection	Full scale on all channels, analog and digital detection
Voltage coupling	AC or DC
ICP power	4mA (20V maximum into open circuit)
Maximum rated input signal	±35 Volts peak
Sampling rate	51,200 samples per second (24bit FE)
Frame size	256, 512,1024, 2048 , 4096
Frame duration	5ms to 32 seconds

Tachometers

Tachometers Inputs	2 or 4
Input Voltage Range	5 or 25 volts
Frequency Range	100,000 Hz on each Tacho Channel (independent of Acquisition bandwidth)

Gates

Gates	Up to 5 Gates for Starting, Stopping, and Incrementing Acquisition
Gate Types	RPM, Frequency, Speed, Auxiliary
Gate Process	Pulses, Tacho Hardware, DC proportional

Analysis

Frequency range (DC to)	50, 100, 200, 500, 1000, 2000, 5000, and 10000Hz; 20000
Frequency resolution	100, 200, 400, 800, and 1600 lines
FFT windows	Hanning, Blackman, calibration, Hamming, Blackman Harris
Window Scaling	Broadband or Narrowband
Spectra Weighting	Flat (None), A , B ,C acoustic functions
Acquisition Mode	Mapped Spectrum, Average Spectrum
Sampling	Fixed or tracked sampling

Averaging

Types	Linear, exponential, peak hold (max)
Number	1 to 100,000
Overlap Processing	None, 25%, 50%, 75%, Max.

Triggering

Modes	Free run, automatic, manual
Source	Any Input channel
Threshold	±mV, ± percent of full scale
Slope	Rising/failing
Delay	Specified in ms or percent of frame
Pre/Post-trigger duration	Specified in ms

Channel Setup

Channel type	Measurement, Reference, Inactive
Sensitivity	0.001 to 1,000,000 mV/EU
ICP power	On/off
Coupling	AC or DC
Channel label	Up to 8 characters for each channel
Transducer serial number	Up to 10 characters for each channel Transducer Database Optional

Tachometers Setup

Tacho Name	Up to 8 characters for each Tacho
Serial #	Up to 8 characters for each Tacho
Status	On/Off
Average Period	1 to 999
Pulses/Rev	1 to 999,999
Coupling	AC, DC, Ground
Tacho Full Scale	5 volts, 25 volts
Trigger Slope	Positive, Negative,
Trigger Level	% Full Scale
Filter	On/ Off
Squaring	On/Off

EU Definitions

Base Engineering Units	Label(EU), Conversion(EU/Transducer Units)
EU Calculations and Support	Integrated (Label and Scale Factor), Double Integrated(Label and Scale Factor), Differentiated (Label and Scale Factor), Double Differentiated (Label and Scale Factor)

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

On-Line Status Monitors

Average count	Current number of frames averaged
Channel Status	RMS or peak levels for all active channels
Message log	Records all test operations, including operator commands, and reports on any error conditions
Gate Status	Time, Gate 1 , Gate 2 , Gate 3 , Gate 4 , Gate 5

On-Line Analysis

Real-time displays	Any available function for all available channels may be displayed simultaneously.
Time	Time Trace, Time Trace 1/rev
FFT	Magnitude, phase, real, Imaginary, Nyquist
FFT-Order	Magnitude, phase, real, Imaginary
Freq Track	Magnitude, phase
Linear Spectrum	EU
Linear Spectrum-Order	EU
Magnitude Spectrum	EU**2
Mag Spectrum-Order	EU**2
Order Track	Magnitude, phase
PSD	EU**2/Hz
PSD-Order	EU**2/Hz
Composite	EU
Transfer functions	Magnitude, phase, real, Imaginary, coherence
Statistical functions	Mean, RMS, Peak +, Peak -, Peak Abs
1/n Octave	1/3, 1/6, 1/12, 1/24
Bode	
Spec Intensity	EU**2/Hz-Hz, EU**2-Hz, EU-Hz, EU**2-Order, EU-Order
Campbell	EU**2/Hz-Hz, EU**2-Hz, EU-Hz, EU**2-Order, EU-Order
Waterfall	EU**2/Hz-Hz, EU**2-Hz, EU-Hz, EU**2-Order, EU-Order
Real-time/Stored data	Simultaneous display and overlay of spectra or time histories for real-time data and any stored data

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 number.
Run message log	Text file records all system status messages displayed during test run

Export Manager (Optional)

File formats	ASCII, STAR™, I-DEAS™, MATLAB™, UFF, ZMOD, ROM, SIR-1000, TH, TIM, TPD, TRD

Throughput Disk

Disk Drives	Up to 4 drives can be installed
Sample rate	Continuous at 51.2kHz sample rate per channel on up to 16 channels to limit of throughput disk capacity
Type	SCSI disk drive 10,000 rpm
Disk size	9.1, 18, 36 or 73 Gbyte, removable. Multi-Run Disk Partitioning allows for multiple test runs per drive
Disk Partitions	Ability to partition the disk so multiple test can be stored prior to transferring data to Host

S P E C T R A L
D Y N A M I C S

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