

NEXT GENERATION "SPECTRA SERIES" TECHNOLOGY

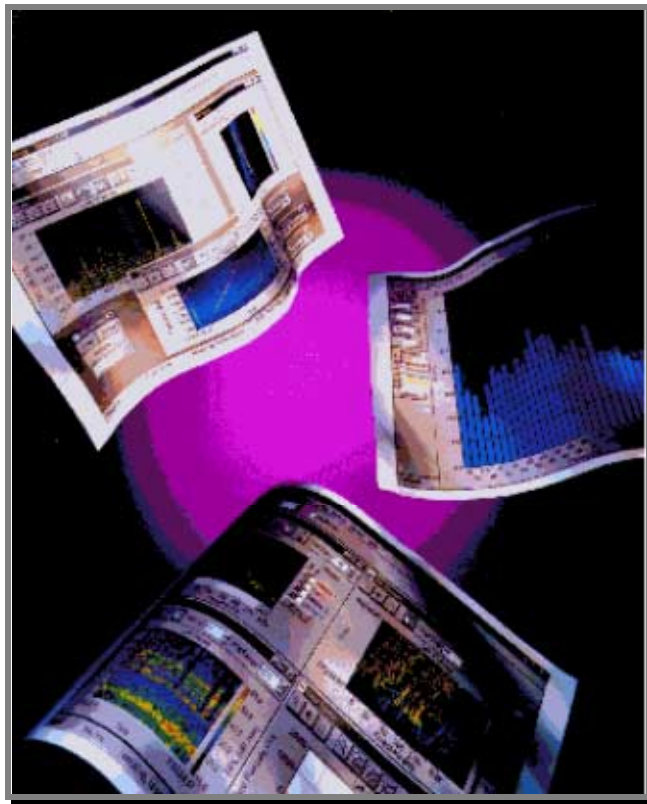
ADVANCED PC-BASED SIGNAL ANALYSIS, ACQUISITION, PROCESSING SOFTWARE

HIGH-PERFORMANCE 32-BIT FLOATING POINT SPEED & ACCURACY

FLEXIBLE, SCALABLE, RELIABLE, EVOLUTIONARY

SpectraSeries™

Transform Your Computer Into A High-Performance
Real-Time PC-Based Signal Analysis & Data Acquisition System



PC-Based Signal Analysis Solutions For The Real World

AS NEW TECHNOLOGIES EVOLVE BASED ON ADVANCES IN THE PC INDUSTRY OUR GOAL REMAINS THE SAME...

ACQUIRE DATA FASTER, MORE ACCURATELY, WITH LESS WORK, AT A GENUINE VALUE.

S T S P E C T R A G R O U P™

A SOUND TECHNOLOGY, INC. COMPANY

---- Celebrating our 35th Anniversary ----

DIVISIONS: SIGNAL ANALYSIS – DATA ACQUISITION – INSTRUMENTATION

PROCESSING@SOUNDTECHNOLOGY.COM | LICENSE@SOUNDTECHNOLOGY.COM

ANALYSIS: SPECTRA PC SERIES™

TURN YOUR PC INTO A POWERFUL SPECTRAL ANALYSIS SYSTEM . . .

32-BIT FLOATING POINT PRECISION & ACCURACY, HIGH-SPEED PROCESSING, ADVANCED DATA LOGGING, AUTOMATION & CONTROL

RIDING THE WAVES OF INNOVATION: From the commercialization of the first integrated circuit (70's) to the development of the microprocessor and the PC (80's) to the internet (90's) - Sound Technology, Inc. (1968) a spin off from HP Labs (1938) has been specializing in test & measurement, advanced digital signal processing, and other innovative technologies like the development of the worlds first digital surround sound system, ST1700 Series automatic audio distortion measurement system, ST1000 Series FM alignment generator, (60's-70's) to the renowned ST1500 series tape recorder/audio test system, ST1530 MTS stereo TV analyzer, ST3000 series communication/broadcast/satellite remote test system (80's) to the first PC-based ST4000 RTA acoustic analyzer, Spectra**Series** SOFTTEST (signal analysis), SoundDAQ, portable signal conditioners (90's) to the present – ST Sound**Series** (portable acquisition), integrated acquisition & measurement systems, digital recording/high-speed digital PC link, virtual instruments, plug-&-play licensing technology (2K's).

PC-BASED MEASUREMENT REVOLUTION: Looking back on the evolution of the personal computer, software has revolutionized productivity, flexibility, and creativity throughout our lifetime. CAD software has made hand-drawn schematics obsolete. Spreadsheets have replaced calculators, and scalable measurement software (virtual instruments) have replaced dedicated expensive instrumentation. Measurement software will continue to dramatically improve development & design productivity, expand production test, and will continue to drive significant increases in system performance at a lower-cost.

VIRTUAL INSTRUMENTATION: As a result of vast improvements and advances in bus architecture during the (80's-90's), PC-based test was born and the concept of streaming data from a data acquisition device, i.e. sound card, PCMCIA-PC Card, DAQ board, etc., to your computer emerged. Over the past decade, our Spectra**Series** SOFTTEST has played a vital role in the PC-based measurement evolution and our advanced softest and integrated acquisition & measurement solutions (Sound**Series**) work in concert to empower you to construct powerful, flexible, lower-cost, scalable, virtual instrument-quality solutions with an easy to use open architecture to accommodate all of your present and future acquisition, analysis, and measurement needs. Our Spectra**Series** software does not require proprietary hardware and is compatible with standard commercial sound cards, high-speed DAQ boards, and has been designed and optimized to work in concert with our Sound**Series** hardware to transform your computer into a powerful spectral analysis system.

SPECTRA SERIES SOFTTEST: Our signal analysis software series solutions are intended for use in the most demanding PC-based measurement applications. Based on our unique flexible and scalable digital engine, Spectra technology is designed to accommodate a wide range of application and budget to meet your present and future needs. To ensure precision, accuracy, and speed Spectra converts incoming data to 32-bit floating point values for all numeric operations regardless of the analog/digital conversion technology implemented by the sound device (i.e. 8, 16, 20, 24-bits). Using proprietary algorithms and advanced signal processing techniques, Spectra maintains ultra-high performance in real world use from computer-to-computer and is not limited by the sound device. Even better, upgrade your sound device and Spectra will automatically take advantage of the newly acquired precision, accuracy and extended dynamic range & frequency response.

INNOVATIVE DESIGN: As a leader in high-performance signal processing we offer a wide range of solutions from our low-cost gateway products to our sophisticated high-end integrated systems. Our advances in design give you faster processing and increased system resources. We are committed to providing innovative designs to meet the demands of the new millennium. Our Spectra**Series** software incorporate the latest advances in PC-based signal processing and provide unprecedented compatibility with a wide range of operating systems and sound devices (i.e. sound cards, data acquisition boards, USB audio interfaces, signal conditioners, etc.)...

TAP INTO OUR EXPERIENCE: A spin-off from HP Labs – ST welcomes you in a celebration of our 35th anniversary as a leader in high-performance signal processing, analysis, acquisition, instrumentation & measurement technologies. We offer a wide range of solutions from our low-cost gateway products to our sophisticated high-end integrated systems. Our advances in design give you faster processing, increased system resources, simplified embedded system integration and dynamic power management to ensure low-power consumption for ruggedized portable/mobile applications. We are committed to providing innovative designs to make acquisition and measurement systems smaller, faster, more functional, and more distributed to meet the demands of the new millennium.

SpectraSeries™

PC-BASED SIGNAL ANALYSIS & DATA ACQUISITION

S P E C T R A M O D E S

- **Real-Time** – in the real-time mode, the program acquires an FFT sized block of digitized sound data directly from the sound device, computes the spectrum and displays the results. The program will continuously acquire new data, average it with previous data, and display the results until stopped. The toolbar controls allow selectable averaging block size and peak hold while running. RT mode allows continuous signal acquisition, analysis, processing and display for an indefinite period of time.
 - **Recorder** – in the recorder mode, the direct-to-disk recording feature allows you to playback and save sound files (.WAV) to your computer hard disk with control over bit-density and sampling rate. During the acquisition process, the program will also display the real-time spectrum of the signal while recording or playing back the acquired sound files.
 - **Post-Processing** – in the post-processing mode, the program allows you to process previously recorded audio data/sound files. This mode allows provides greater control with the use of overlap processing to effectively stretch the time resolution in both the Spectrogram and 3-D Surface plots with no gaps in the processed data. In addition you can edit and playback selected time segments which allows in-depth analysis.
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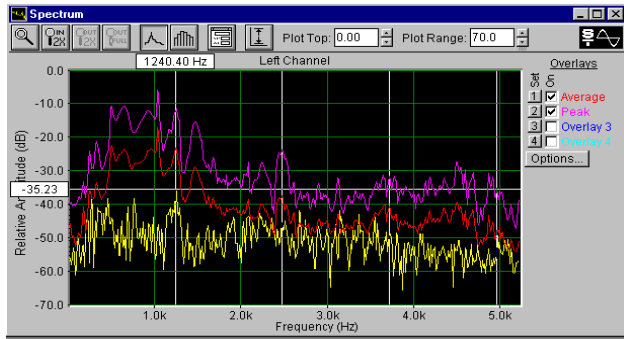
S P E C T R A V I E W S

- **Time Series** – time domain views provide amplitude or energy versus time plots. This view displays the raw digitized audio data and is similar to an oscilloscope display.
 - **Spectrum** – frequency domain views provide amplitude versus frequency plots. This view displays a 2 dimensional plot of the frequency spectrum with selectable amplitude scaling.
 - **Phase** – phase view provides phase versus frequency plots. This view displays a 2 dimensional plot of inter-channel phase between the right and left channels.
 - **Spectrogram** – 3D color perspective provides amplitude/energy-time-frequency plots. This view displays a 3D top view of the spectral data over time. The amplitude (linear) or energy (log) is shown in color or grayscale and provides selectable scroll direction and many other parameters. 3D cursor measurements are supported on all axis.
 - **3D Surface** – 3D perspective provides amplitude/energy-time-frequency plots. This view displays a 3D waterfall plot and provides a side view of the spectral data over time. Frequency is shown on the X-axis and time on the Y-axis. This view is useful for visualizing the dynamics of the spectral data.
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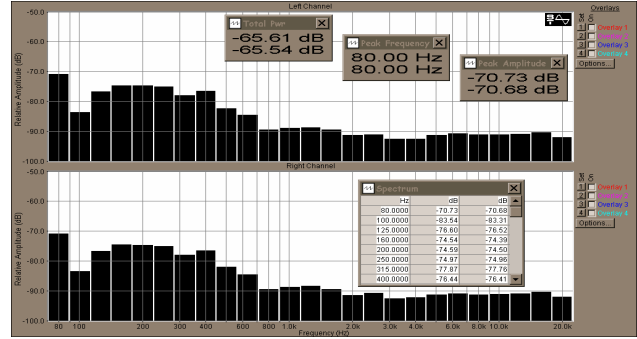
S P E C T R A M E A S U R E M E N T S

- | | |
|-----------------------------------|------------------------------|
| • Dual Channel Real-Time Analyzer | • Transfer Functions |
| • Narrowband FFT Analysis | • Signal Generation |
| • Fractional Octave Analysis | • Cursor Measurements |
| • Distortion Analysis | • Dual Channel Processing |
| • SNR | • Digital Meters |
| • Zoom Analysis | • Real-Time Markers |
| • Time Slice | • Real-Time Data Tables |
| • IFFT | • Smoothing Windows |
| • Overlays | • Averaging |
| • Decimation | • Peak Hold |
| • ANSI Weighting Curves | • Triggering |
| • Mic Compensation | • Calibration |
| • Configuration Files | • Import/Export/Merge |
| • Data Logging | • Dynamic Data Linking (DDE) |

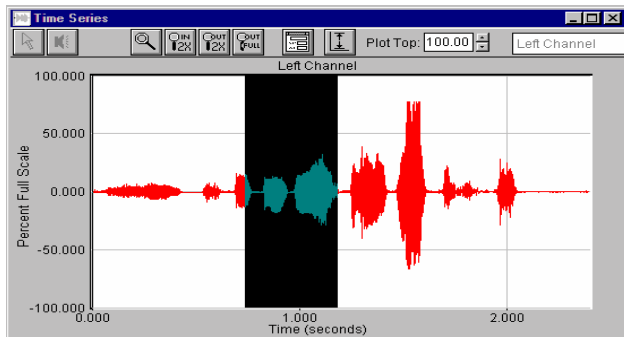
SPECTRA VIEWS (SAMPLE SCREEN SHOTS)



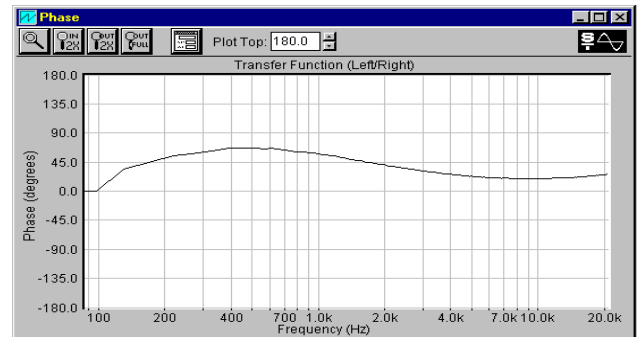
Spectrum View – displays frequency domain measurements. The example shows overlays of previous plots versus current real-time spectral data with harmonic cursors.



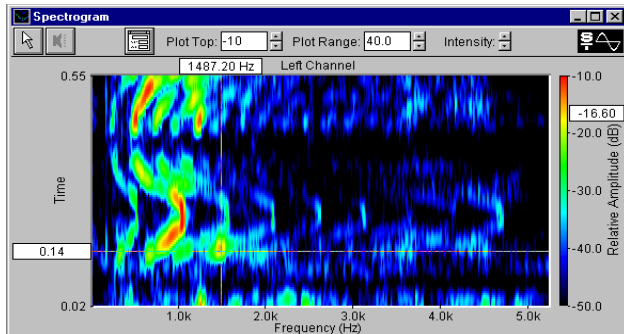
Spectrum View – example displays dual channel fractional 1/3 octave-band analysis with peak hold and real-time spreadsheet of the underlying spectral data values showing frequency and amplitude along with Total Power, Peak Frequency, Peak Amplitude.



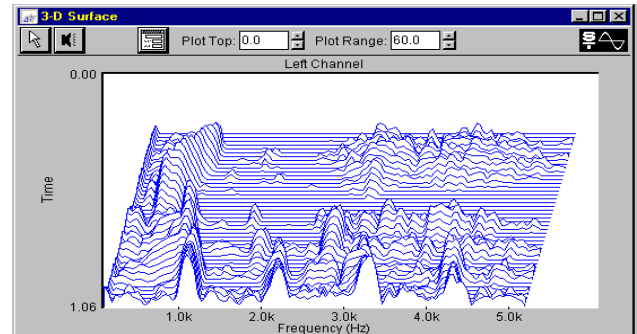
Time Series – displays time domain measurements and provides amplitude or energy time curves with slice & zoom analysis and advanced computations and transformations.



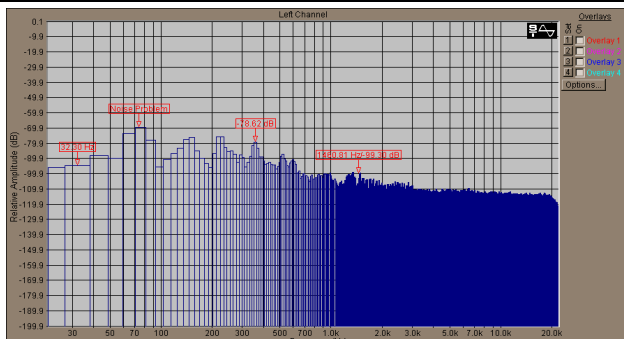
Phase View – displays inter-channel phase in degrees versus frequency. Other transfer function measurements are also supported in the Spectrum View.



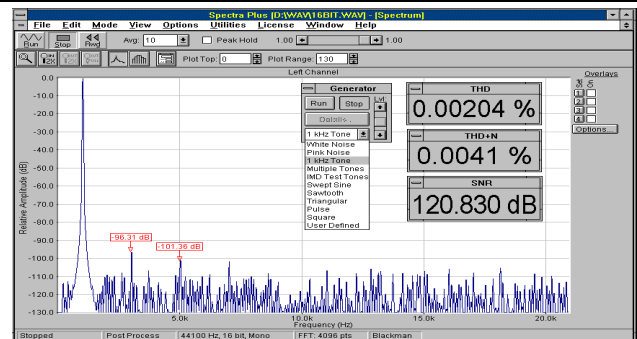
Spectrogram View – the example displays 3D color amplitude/energy-time-frequency plots with 3D cursor measurements. The amplitude (linear) or energy (log) is shown in color or gray scale and provides selectable scroll direction and many other advanced parameters.



3D Surface/Waterfall Plot – displays amplitude/energy-time-frequency perspective. This view has been optimized for dynamic signal analysis. The background and line color of each plot feature can be changed to support a wide range of applications.



Spectrum View – the example displays log frequency scaling for complex high-resolution frequency analysis with real-time frequency, amplitude, and custom markers.



Spectrum View – the example displays narrow-band frequency spectra and detailed distortion and noise analysis with signal generation and on-the-fly real-time digital meters.

INTRODUCTION

Spectra**Series** software transform your computer into a powerful signal analysis & data acquisition system. The program(s) provide 32-bit floating point speed & accuracy and are designed to leverage the wide ranging scales of economy within the advancing PC industry. Spectra**Series** interface with any Windows compatible sound card/DAQ device to provide real-time spectral analysis as well as recording, playback and advanced post-processing capabilities and support high-resolution FFT narrowband processing, smoothing windows, overlap processing, averaging, peak hold, triggering, decimation, octave-band scaling and can display, import/export and print time & frequency domain information and incorporate extensive views including Time Series, Spectrum, Phase, 3-D Surface & Waterfall plots, and Color Spectrogram/Sound Intensity maps. An integral full function Signal Generator utility is also available plus much more...

WHAT IS A SPECTRUM ANALYZER

A spectrum analyzer is an instrument used to convert a signal from the time domain (amplitude-vs-time) to the frequency domain (amplitude-vs-frequency). If you are familiar with an ordinary oscilloscope you know what a time domain display looks like. A frequency domain display is known as a spectrum. Unless you are measuring a single tone, an oscilloscope provides little in the way of frequency information; however, a spectrum analyzer clearly reveals this information. The specific analysis/acquisition frequency range is determined by the capabilities of your sound card/device (frequency range = sampling rate/2).

HOW DOES IT WORK

Spectra**Series** programs work in conjunction with the sound card/audio device on your computer. Connect the audio signal/sound source to be analyzed/measured into the input of your sound device. Spectra**Series** then uses the sound device to perform an "Analog-to-Digital" conversion on the signal source. The digitized signal is then passed through a math algorithm known as a Fast Fourier Transform (FFT) which converts the signal from the time domain to the frequency domain. The CPU on your computer is used to perform this transformation. Leverage your investment - as new technologies continue to evolve based on advances in the PC industry, our goal remains the same... acquire data faster, more accurately, with less work, at a genuine value.

CONFIGURATION

If you have been searching for a cost effective high-resolution spectral analysis tool designed to perform complex signal analysis, with real-time fractional octave analysis (up to 1/3), narrow-band measurement (up to 32K FFT), zoom and dynamic signal analysis, with just the right utility instruments and other advanced processing features; check out our gateway PLUS232 software.

SPECTRA**PLUS**™

Personal Engineering Edition

FFT AUDIO SPECTRUM ANALYZER
ADVANCED SIGNAL ANALYSIS SOFTWARE...
AUDIO & ELECTRONIC HOBBYIST

SCALABLE ANALYSIS SOLUTION . . .

SPECTRAPLUS232A BASE ANALYZER INCLUDES . . .

- SINGLE CHANNEL/MONO OPERATION
- REAL-TIME MODE
- VIEWS: SPECTRUM, TIME SERIES, PHASE
- NARROWBAND FFT UP TO 32,768 PTS MAX
- REAL-TIME 1/1, 1/3 OCTAVE SPECTRAL ANALYSIS
- DIGITAL METERS: PEAK FREQUENCY, AMPLITUDE, TOTAL POWER
- MEMORIES; TRIGGERING; MARKERS
- AVERAGING; PEAK HOLD; DECIMATION (20:1)
- CURSORS MEASUREMENTS; RIGHT CLICK ACTION MENUS
- MIC COMPENSATION; SPECTRAL WEIGHTING (A/B/C)
- UNITS - VOLTS, SPL_db

SOFTWARE . . .

- 32-BIT FLOATING POINT SIGNAL PROCESSING PRECISION & SPEED
- SUPPORTS: 16-BIT/48kHz ADC-DAC CONVERSION TECHNOLOGY
- LICENSE TYPE: INTEGRAL SOFTKEY (HD ENCRYPTION)
- INTEGRATED PLUG-&-PLAY ACQUISITION: SEE SOUND SERIES SECTION

MINIMUM SYSTEM REQUIREMENTS . . .

- OS: WINDOWS-BASED (32-BIT) 95/98/NT/ME/2K/XP
 - 486 OR HIGHER CPU; 16MB RAM; 4MB HD
 - 256 COLOR VGA MONITOR
 - MAC OS: VIRTUAL PC
-

ADVANCED MEASUREMENT ADD-ON OPTION SUMMARY . . .

- **OPT/02_DUAL CHANNEL/ADVANCED SIGNAL PROCESSING:** ADDS DUAL CHANNEL OPERATION, REAL AND COMPLEX TRANSFER FUNCTIONS, COHERENCE, AVERAGE, CROSS SPECTRUM AND CROSS CHANNEL DELAY COMPENSATION. ALSO INCLUDES X/Y TIME SERIES PLOT OPTION.
 - **OPT/03_3-D SURFACE DISPLAY:** ADDS 3D WATERFALL PERSPECTIVES - DISPLAYS THE SPECTRUM VERSUS TIME IN A 3-DIMENSIONAL PERSPECTIVE FORMAT.
 - **OPT/04_COLOR SPECTROGRAM DISPLAY:** ADDS JOINT-TIME-FREQUENCY ANALYSIS - DISPLAYS THE SPECTRUM VERSUS TIME IN GRAY SCALE OR COLOR FORMAT.
 - **OPT/10_RECORD/PLAYBACK/POST-PROCESS MODES:** ADDS RECORDER AND POST PROCESSING MODES - ALLOWS DIRECT HARD DISK RECORDING AND PLAYBACK. POST PROCESSING MODE PROVIDES COMPREHENSIVE ANALYSIS FROM WAV FILES.
 - **OPT/30_SIGNAL GENERATION:** ADDS SIGNAL GENERATION - PINK/WHITE NOISE, NOISE BURST, SWEPT SINE, 1 KHz TONE, MULTIPLE TONES, SAW, SQUARE, PULSE, IMD TEST TONES AND USER DEFINED WAV SOURCE.
 - **OPT/50_DIGITAL METERS:** ADDS DIGITAL METERS FOR ON-THE-FLY REAL-TIME MEASUREMENTS.. DISTORTION ANALYSIS THD, THD+N, IMD, SNR.
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CONFIGURATION

Our Spectra**Series** is scalable to accommodate your present and future measurement requirements, applications & budget. The flexible architecture allows advanced features to be added any time you are ready to enhance and expand your investment. Our software valuepaks represent a genuine value.

If you are in need of a fully scalable ultra-high resolution spectral analysis tool designed for difficult noise and vibration applications capable of performing complex signal analysis and advanced post-processing with real-time fractional octave (up to 1/24), narrow-band (up to 500K FFT), zoom and dynamic signal analysis, multicolor 3D perspectives – color sound intensity maps, with a wide array of utility instruments and advanced 2D/3D transformations and Right Click Action Menus for the ultimate in mission critical joint-time and frequency analysis, data acquisition, dynamic data linking, data logging, and parallel test; check out PRO332 software.

SPECTRA**PRO**™

Sound & Vibration Enterprise Edition

ULTRA-HIGH RESOLUTION COMPLEX SIGNAL ANALYSIS & HIGH-PERFORMANCE DATA ACQUISITION SOFTWARE

ACOUSTICS-SOUND-VIBRATION MEASUREMENT/AUDIO TEST/JOINT T&F ANALYSIS/DATA LOGGER/AUTOMATED MEASUREMENTS...

SYSTEMS INTEGRATION – DYNAMIC DATA LINKING – CUSTOM STATISTICAL ANALYSIS

AUTOMATED TEST SEQUENCING/BATCH PROCESSING/PASS-FAIL TESTING

SCALABLE ANALYSIS SOLUTION . . .

SPECTRAPRO332A BASE ANALYZER INCLUDES . . .

- SINGLE CHANNEL/MONO OPERATION
 - REAL-TIME MODE WITH DATA BUFFERING
 - VIEWS – SPECTRUM, TIME SERIES, PHASE, IFFT, PSD
 - NARROWBAND FFT UP TO 32,768 PTS; EXPANDABLE (OPT/43)
 - 1/1, 1/3, 1/6 OCTAVE SPECTRAL ANALYSIS; EXPANDABLE (OPT/05)
 - DIGITAL METERS: PEAK FREQUENCY & AMPLITUDE, TOTAL POWER
 - MEMORIES; TRIGGERING; MARKERS; OVERLAYS
 - AVERAGING; PEAK HOLD; DECIMATION (30:1)
 - CURSOR MEASUREMENTS; RIGHT CLICK ACTION MENUS
 - MIC COMPENSATION; SPECTRAL WEIGHTING (A/B/C)
 - UNITS – VOLTS, SPL_dB, ACCELERATION (G), CUSTOM
 - TIME SLICE & ZOOM ANALYSIS; DATA VIEW; AUTO SCALING
 - CONFIG FILES FOR QUICK TEST SETUP/RECALL
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SOFTWARE . . .

- 32-BIT FLOATING POINT SIGNAL PROCESSING PRECISION & SPEED
- SUPPORTS: 24-BIT/96kHz ADC-DAC PRECISION TECHNOLOGY
- LICENSE TYPE: INTEGRAL SOFTKEY (HD ENCRYPTION)
- INTEGRATED PLUG-&-PLAY ACQUISITION: SEE SOUND SERIES SECTION
- INTEGRATED MEASUREMENTS: EXCEEDS ANSI S1.11-1986 (SEE SOUND SERIES)

MINIMUM SYSTEM REQUIREMENTS . . .

- OS: WINDOWS-BASED (32-BIT) 95/98/NT/ME/2K/XP
 - 486 OR HIGHER CPU; 16MB RAM; 4MB HD
 - 256 COLOR VGA MONITOR
 - MAC OS: VIRTUAL PC
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ADVANCED MEASUREMENT ADD-ON OPTION SUMMARY . . .

- **OPT/02_DUAL CHANNEL/ADVANCED SIGNAL PROCESSING:** ADDS DUAL CHANNEL OPERATION, REAL AND COMPLEX TRANSFER FUNCTIONS, COHERENCE, AVERAGE AND CROSS SPECTRUM AND CROSS CHANNEL DELAY COMPENSATION. ALSO INCLUDES X+Y AND X/Y TIME SERIES DISPLAY.
 - **OPT/03_3-D SURFACE DISPLAY:** ADDS 3-D WATERFALL PERSPECTIVES FOR ADVANCED DYNAMIC SPECTRAL ANALYSIS. MULTICOLOR MODE PROVIDES A GRADUATED COLOR SCALE REFLECTING SIGNAL AMPLITUDE. 3-D CURSOR DISPLAYS TIME, FREQUENCY, AMPLITUDE.
 - **OPT/04_COLOR SPECTROGRAM DISPLAY:** ADDS GREY SCALE, FULL AND CUSTOM COLOR PALETTE FOR ADVANCED JOINT TIME-FREQUENCY ANALYSIS, SPECTRAL MAPPING, SOUND INTENSITY, SONOGRAM AND HIGH-RESOLUTION VOICE SIGNATURE.
 - **OPT/05_ADVANCED OCTAVE ANALYSIS:** ADDS SELECTABLE HIGH-RESOLUTION 1/9, 1/12, 1/24, 1/48 OCTAVE SCALING FOR ADVANCED ACOUSTIC & SOUND ANALYSIS.
 - **OPT/10_RECORD/PLAYBACK/POST-PROCESS MODES:** ADDS DYNAMIC DATA RECORDER-TIME CAPTURE FOR DIRECT-TO-DISK RECORDING AND PLAYBACK. POST-PROCESSING MODE PROVIDES DIGITAL FILTERING AND COMPREHENSIVE ANALYSIS FROM WAV AND DATA FILES.
 - **OPT/30_SIGNAL GENERATION:** ADDS ADVANCED SIGNAL GENERATION WITH NEW STEREO GEN MODE INCLUDES - 1kHz CAL TONE, PINK/WHITE NOISE, TONE BURST, NOISE BURST, SWEPT SINE, SINGLE & MULTI-TONES, IMD, SAW, SQUARE, TRIANGLE, PULSE, DTMF, AND USER DEFINED WAV SOURCE.
 - **OPT/43_ADVANCED FFT ANALYSIS:** ADDS SELECTABLE ULTRA-HIGH SPECTRAL RESOLUTION & PROVIDES EXTENDED FFT SIZES OF 65,536, 131,072, 262,144 & 524,288.
 - **OPT/50_DIGITAL METERS:** ADDS DIGITAL METERS FOR ON-THE-FLY REAL-TIME MEASUREMENTS.. DISTORTION ANALYSIS THD, THD+N, IMD, SNR, SINAD, NOISE FIGURE (NF) AND DYNAMIC RANGE (DR). DELAY FINDER - MEASURES DELAY BETWEEN TWO CHANNELS IN MILLISECONDS, FEET OR METERS. SPEED OF SOUND - CONVERTS THE DELAY VALUE BETWEEN MILLISECONDS, FEET OR METERS. ALSO INCLUDES DTMF ANALYSIS AND COMPUTES LEO, RMS LEVEL AND CREST FACTOR FOR A SELECTED TIME SEGMENT.
 - **OPT/53_VIBRATION MEASUREMENTS:** ADDS SPECTRUM INTEGRATION - CALIBRATION CONVERSIONS FROM ACCELERATION TO VELOCITY OR DISPLACEMENT UNITS.
 - **OPT/60_DDE/DATA LOGGING:** ADDS DYNAMIC DATA EXCHANGE - THE LATEST TECHNOLOGY IN DYNAMIC LINKING PROVIDES HIGH-SPEED DATA EXCHANGE BETWEEN PRO332 REAL-TIME I/O DATABASE AND ANY EXTERNAL DATABASE, SPREADSHEET, MS OFFICE, OR OTHER CUSTOM APPLICATION OR ANALYSIS SOFTWARE THAT SUPPORTS DDE. ALLOWS COMPLETE TEST AUTOMATION & CONTROL, LIMIT TESTING OR STATISTICAL PROCESSING. MULTI-CHANNEL DATA LOGGING - PRODUCES AN OUTPUT TEXT FILE CONTAINING SELECTED SPECTRAL PARAMETERS + TIMESTAMP FOR DYNAMIC SIGNAL TRACKING & "UNATTENDED" EVENT MONITORING.
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CONFIGURATION

Our Spectra**Series** is scalable to accommodate your present and future measurement requirements, applications & budget. The flexible architecture allows advanced features to be added any time you are ready to enhance and expand your investment. Our software valuepaks represent a genuine value.

If you require a super ultra-high resolution spectral analysis tool designed for research, engineering, technical, design, or high-definition multimedia/audio test applications up to 24/192K, capable of performing complex signal analysis and advanced post-processing with real-time fractional octave (up to 1/96), narrow-band (up to 1M FFT), zoom and dynamic signal analysis, multicolor 3D perspectives – color intensity maps, with a wide array of utility instruments and advanced 2D/3D transformations and Right Click Action Menus for the ultimate in mission critical joint-time and frequency analysis, data acquisition, dynamic data linking, data logging, and parallel test; check out LAB432 software.

SPECTRALAB™

Acoustics Vibration & Sound Quality Elite Edition

SUPERULTRA-HIGH RESOLUTION COMPLEX SIGNAL ANALYSIS & MULTIMEDIA/AUDIO TEST SOFTWARE

ACOUSTICS-SOUND-VIBRATION MEASUREMENT/AUDIO TEST/JOINT T&F ANALYSIS/DATA LOGGER/AUTOMATED MEASUREMENTS...

SYSTEMS INTEGRATION – DYNAMIC DATA LINKING – CUSTOM STATISTICAL ANALYSIS

AUTOMATED TEST SEQUENCING/BATCH PROCESSING/PASS-FAIL TESTING

SCALABLE ANALYSIS SOLUTION . . .

SPECTRALAB432A BASE ANALYZER INCLUDES . . .

- SINGLE CHANNEL/MONO OPERATION
- REAL-TIME MODE WITH DATA BUFFERING
- VIEWS – SPECTRUM, TIME SERIES, PHASE, IFFT, PSD
- NARROWBAND FFT UP TO 65,536 PTS; EXPANDABLE (OPT/43)
- 1/1, 1/3, 1/6, 1/9 OCTAVE SPECTRAL ANALYSIS; EXPANDABLE (OPT/05)
- DIGITAL METERS: PEAK FREQUENCY & AMPLITUDE, TOTAL POWER
- MEMORIES; TRIGGERING; MARKERS; OVERLAYS
- AVERAGING; PEAK HOLD; DECIMATION (50:1)
- CURSOR MEASUREMENTS; RIGHT CLICK ACTION MENUS
- MIC COMPENSATION; SPECTRAL WEIGHTING (A/B/C)
- UNITS – VOLTS, SPL_dB, ACCELERATION (G), CUSTOM
- TIME SLICE & ZOOM ANALYSIS; DATA VIEW; AUTO SCALING
- CONFIG FILES FOR QUICK TEST SETUP/RECALL

SOFTWARE . . .

- 32-BIT FLOATING POINT SIGNAL PROCESSING PRECISION & SPEED
- SUPPORTS: 24-BIT/192KHZ ADC-DAC PRECISION TECHNOLOGY
- LICENSE TYPE: INTEGRAL SOFTKEY (HD ENCRYPTION)
- INTEGRATED PLUG-&PLAY ACQUISITION: SEE SOUND SERIES SECTION
- INTEGRATED MEASUREMENTS: EXCEEDS ANSI S1.11-1986 (SEE SOUND SERIES)

MINIMUM SYSTEM REQUIREMENTS . . .

- OS: WINDOWS-BASED (32-BIT) 95/98/NT/ME/2K/XP
 - 486 OR HIGHER CPU; 16MB RAM; 4MB HD
 - 256 COLOR VGA MONITOR
 - MAC OS: VIRTUAL PC
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ADVANCED MEASUREMENT ADD-ON OPTION SUMMARY . . .

- **OPT/02_DUAL CHANNEL/ADVANCED SIGNAL PROCESSING:** ADDS DUAL CHANNEL OPERATION, REAL AND COMPLEX TRANSFER FUNCTIONS, COHERENCE, AVERAGE AND CROSS SPECTRUM AND CROSS CHANNEL DELAY COMPENSATION. ALSO INCLUDES X+Y AND X/Y TIME SERIES DISPLAY.
 - **OPT/03_3-D SURFACE DISPLAY:** ADDS 3-D WATERFALL PERSPECTIVES FOR ADVANCED DYNAMIC SPECTRAL ANALYSIS. MULTICOLOR MODE PROVIDES A GRADUATED COLOR SCALE REFLECTING SIGNAL AMPLITUDE. 3-D CURSOR DISPLAYS TIME, FREQUENCY, AMPLITUDE.
 - **OPT/04_COLOR SPECTROGRAM DISPLAY:** ADDS GREY SCALE, FULL AND CUSTOM COLOR PALETTE FOR ADVANCED JOINT TIME-FREQUENCY ANALYSIS, SPECTRAL MAPPING, SOUND INTENSITY, SONOGRAM AND HIGH-RESOLUTION VOICE SIGNATURE.
 - **OPT/05_ADVANCED OCTAVE ANALYSIS:** ADDS SELECTABLE ULTRA-HIGH RESOLUTION 1/12, 1/24, 1/48, 1/96 OCTAVE SCALING FOR ADVANCED ACOUSTIC & SOUND ANALYSIS.
 - **OPT/10_RECORD/PLAYBACK/POST-PROCESS MODES:** ADDS DYNAMIC DATA/DIGITAL AUDIO RECORDER-TIME CAPTURE FOR DIRECT-TO-DISK RECORDING AND PLAYBACK. POST-PROCESSING MODE PROVIDES DIGITAL FILTERING AND COMPREHENSIVE ANALYSIS FROM WAV AND DATA FILES.
 - **OPT/30_SIGNAL GENERATION:** ADDS ADVANCED SIGNAL GENERATION WITH NEW STEREO GEN MODE INCLUDES - 1kHz CAL TONE, PINK/WHITE NOISE, TONE BURST, NOISE BURST, SWEEP SINE, LEVEL SWEEP, SINGLE & MULTI-TONES, IMD, SAW, SQUARE, TRIANGLE, PULSE, DTMF, AND USER DEFINED WAV SOURCE.
 - **OPT/43_ADVANCED FFT ANALYSIS:** ADDS SELECTABLE ULTRA-HIGH SPECTRAL RESOLUTION AND PROVIDES EXTENDED FFT SIZES OF 131,072, 262,144, 524,288 AND 1,048,576 POINTS.
 - **OPT/50_DIGITAL METERS:** ADDS DIGITAL METERS FOR ON-THE-FLY REAL-TIME MEASUREMENTS.. DISTORTION ANALYSIS THD, THD+N, IMD, SNR, SINAD, NOISE FIGURE (NF) AND DYNAMIC RANGE (DR). DELAY FINDER - MEASURES DELAY BETWEEN TWO CHANNELS IN MILLISECONDS, FEET OR METERS. SPEED OF SOUND - CONVERTS THE DELAY VALUE BETWEEN MILLISECONDS, FEET OR METERS. ALSO INCLUDES DTMF ANALYSIS AND COMPUTES LEQ, RMS LEVEL AND CREST FACTOR FOR A SELECTED TIME SEGMENT.
 - **OPT/52_ADVANCED SIGNAL PROCESSING:** ADDS HILBERT TRANSFORM - COMPUTES THE ENVELOPE (MAGNITUDE) OF THE SELECTED TIME SEGMENT; SCHROEDER INTEGRATION - COMPUTES A REVERSE INTEGRATION (RIGHT TO LEFT).
 - **OPT/53_VIBRATION MEASUREMENTS:** ADDS SPECTRUM INTEGRATION - CALIBRATION CONVERSIONS FROM ACCELERATION TO VELOCITY OR DISPLACEMENT UNITS.
 - **OPT/60_DDE/DATA LOGGING:** ADDS DYNAMIC DATA EXCHANGE - THE LATEST TECHNOLOGY IN DYNAMIC LINKING PROVIDES HIGH-SPEED DATA EXCHANGE BETWEEN PRO332 REAL-TIME I/O DATABASE AND ANY EXTERNAL DATABASE, SPREADSHEET, MS OFFICE, OR OTHER CUSTOM APPLICATION OR ANALYSIS SOFTWARE THAT SUPPORTS DDE. ALLOWS COMPLETE TEST AUTOMATION & CONTROL, LIMIT TESTING OR STATISTICAL PROCESSING. MULTI-CHANNEL DATA LOGGING - PRODUCES AN OUTPUT TEXT FILE CONTAINING SELECTED SPECTRAL PARAMETERS + TIMESTAMP FOR DYNAMIC SIGNAL TRACKING & "UNATTENDED" EVENT MONITORING.
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