

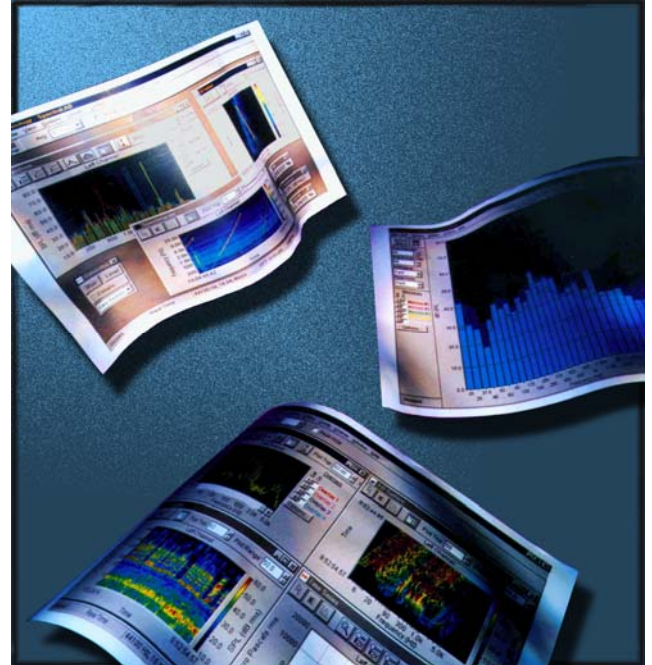


# High Performance

# Genuine Value

# Simplified

**PC-BASED SOFTEST:** Our computer-based measurement & acquisition solutions offer integrated signal analysis, advanced processing tools and represent an outstanding value to our customers. The flexible architecture provides researchers, scientists, engineers, technicians, electronic hobbyists and others with ST quality measurements. The analysis suite features vivid high-resolution two and three-

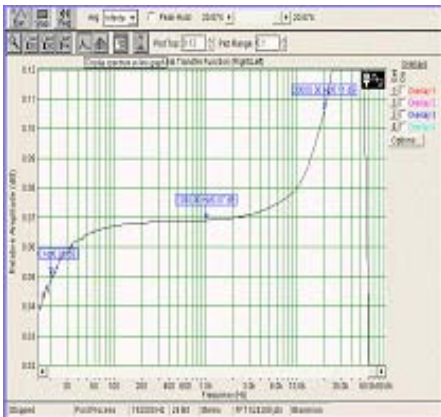


dimensional visualization perspectives. Our high-speed digital engine and modular infrastructure allow you to select a vast set of scalable performance capabilities and create affordable customized targeted solutions for each mission or application. That means you only pay for features and performance you need, when you need them. Even better, advanced features can be added on-the-fly any time you are ready to migrate and expand your investment over-time to meet your evolving needs. **Customization** – our new automation tools support the growing need for tailor made application-specific solutions.

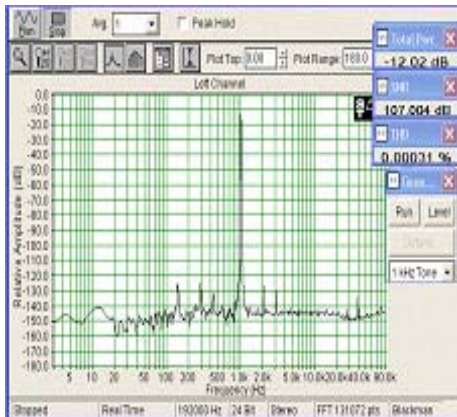
The integral high-resolution analysis tools provide instrument quality measurements of time, frequency and acoustic domain. The combination of time series, zoom & slice analysis, 2D-3D and other advanced transformations, along with a powerful narrow-band spectrum analyzer offer a comprehensive collage of measurements that have been optimized to meet a broad range of applications. And because our technology is computer-based you can leverage your existing investment by utilizing your available computing resources. **Don't become obsolete...** our scalable solutions are flexible by design and are fully compatible with any Windows-based sound device; providing unmatched long-term value by eliminating the need for expensive proprietary hardware. Equipment longevity has greatly been increased by providing an open signal processing architecture that takes full advantage of the revolutionary advances emerging in the ever changing computer industry.

# DYNAMIC PERFORMANCE MEASUREMENTS

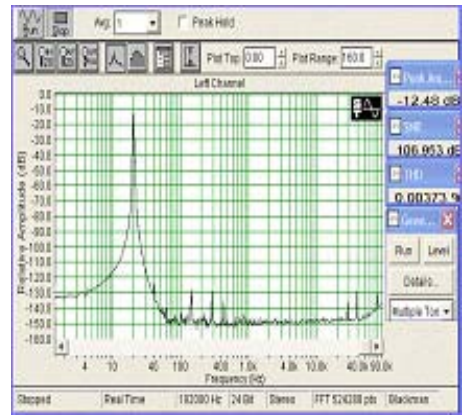
TEST PARAMETER	MODE OF OPERATION 24 BITS, 192 KHz ANALOG I/O
FREQUENCY RESPONSE:	20-20kHz +0.035/- 0.02 dB
1 KHz TOTAL HARMONIC DISTORTION:	0.0003% @ -12 dB
20 Hz TOTAL HARMONIC DISTORTION:	0.0037% @ -12 dB
SIGNAL TO NOISE RATIO:	107 dB
19 & 20 KHz INTERMODULATION DISTORTION:	0.0003% @ -6 dB
DYNAMIC RANGE:	118 dB
JITTER DISTORTION:	-123 dB
ZERO SIGNAL NOISE:	-115 dB
MEASUREMENTS BY:	Athlon CPU; Windows XP; Sound Card ST Spectral Analysis – Audio Measurement Software



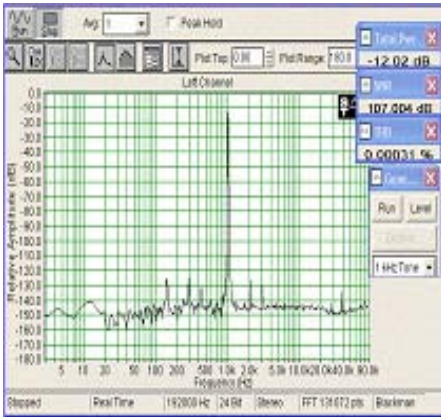
FREQUENCY RESPONSE



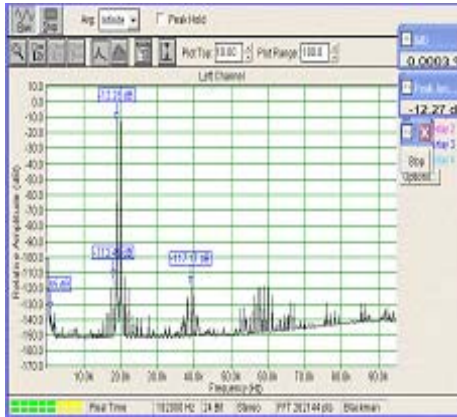
THD @ 1KHz



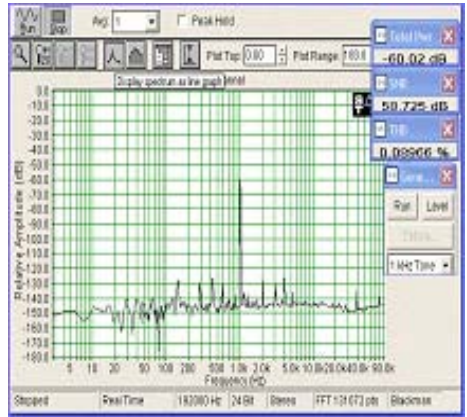
THD @ 20Hz



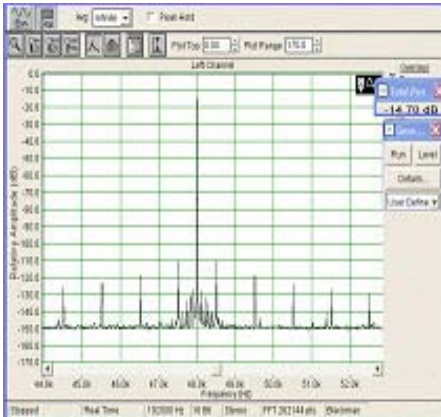
SNR



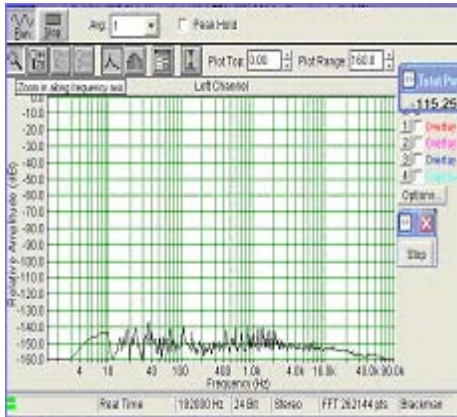
IMD



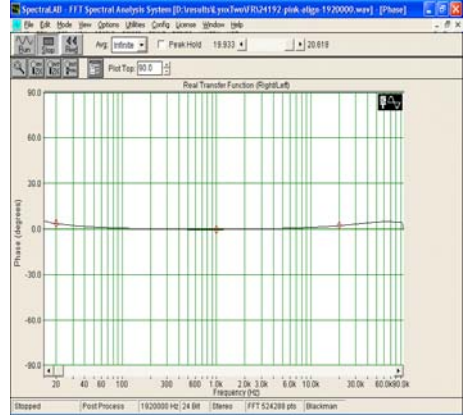
DYNAMIC RANGE



J-TEST



ZERO SIGNAL NOISE



PHASE RESPONSE

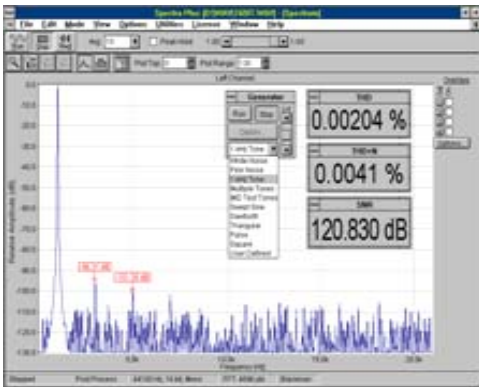
# FREQUENCY DOMAIN MEASUREMENTS

## REAL-TIME SPECTRUM ANALYSIS

– CUSTOMIZEABLE CHARTS, SIMULTANEOUS VIEWING OF WAVEFORM DATA –

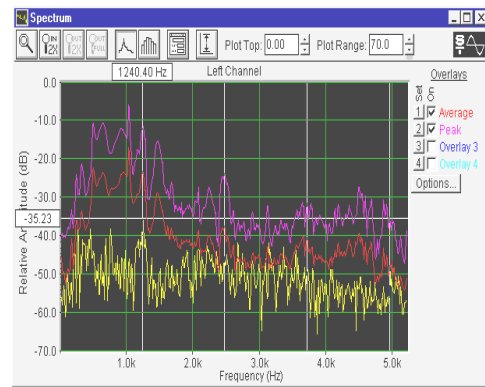
**Spectrum Analyzer.** An instrument that detects and displays signal amplitude versus frequency. Provides a visual display of signal amplitude versus frequency to identify the relative contributions of frequency related components and subdivisions of these components by spectral frequency content.

Performs high-resolution frequency domain measurements with base-band/zoom FFT featuring advanced functions and indicators for handling related engineering units, system calibration, sound measurements, frequency and transient analysis up to 32,768 FFT points with selectable overlap processing, smoothing windows, averaging and decimation up to 30:1 with selectable spectral weighting filters (Linear: A, B, C). Spectrum view displays frequency - magnitude/phase, impedance, IFFT, bandwidth, Q-Factor, raw data views plus memories, triggering, markers, spectral overlays.



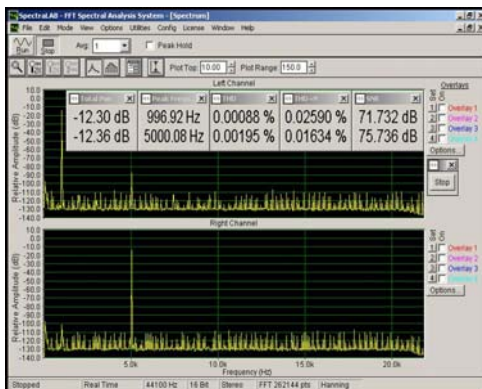
**NARROWBAND SPECTRUM ANALYSIS**

SPECTRUM VIEW DISPLAYS NARROW-BAND FREQUENCY SPECTRA AND DETAILED DISTORTION AND NOISE ANALYSIS WITH SIGNAL GENERATION AND ON-THE-FLY REAL-TIME DIGITAL METERS AND FREQUENCY/AMPLITUDE MARKERS.



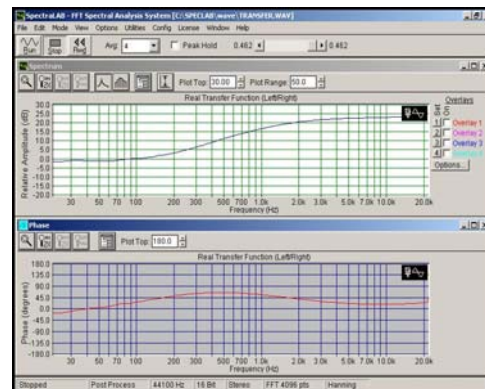
**SPECTRAL OVERLAYS**

SPECTRUM DISPLAYS MULTIPLE FREQUENCY DOMAIN MEASUREMENTS. COMPARE OVERLAYS OF PREVIOUS PLOTS VERSUS REAL-TIME SPECTRAL DATA WITH HARMONIC CURSORS. QUANTIFY THE PERFORMANCE OF PARTS, COMPONENTS, OBJECTS OR OTHER STRUCTURES BY OVERLAYING MEASUREMENTS.



**HIGH-SPEED PARALLEL TESTING**

INDEPENDENT DUAL CHANNEL MEASUREMENTS WITH DETAILED SPECTRAL HARMONIC & NOISE ANALYSIS AND REAL-TIME DIGITAL METERS – TOTAL POWER, PEAK FREQUENCY, SNR, THD, THD+N @ 1/5KHz.



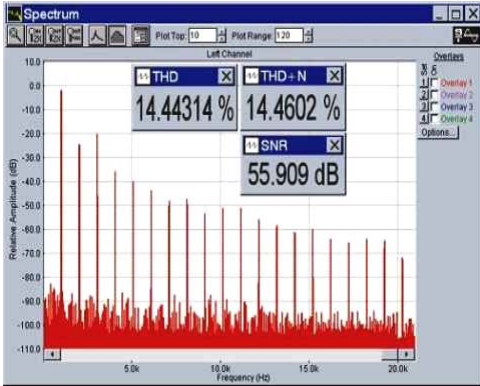
**COMPARATIVE FREQUENCY VS PHASE RESPONSE**

DUAL CHANNEL SPECTRUM ANALYSIS PROVIDES POWERFUL ADVANCED TRANSFER FUNCTION MEASUREMENTS DISPLAYS THE RATIO BETWEEN TWO CHANNELS AND OFFERS QUICK AND ACCURATE FREQUENCY/PHASE RESPONSE MEASUREMENTS.

# SPECTRUM VIEWS

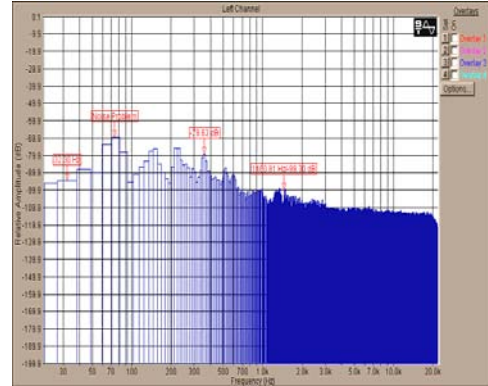
## HIGH-SPEED/HIGH-RESOLUTION MEASUREMENTS ADVANCED SIGNAL GENERATION

THE DISTRIBUTION OF ENERGY IN THE SIGNAL AS A FUNCTION OF FREQUENCY.  
DISPLAYED AS A PLOT OF FREQUENCY (X-AXIS) AGAINST AMPLITUDE (Y-AXIS) CALLED A *SPECTRUM*.



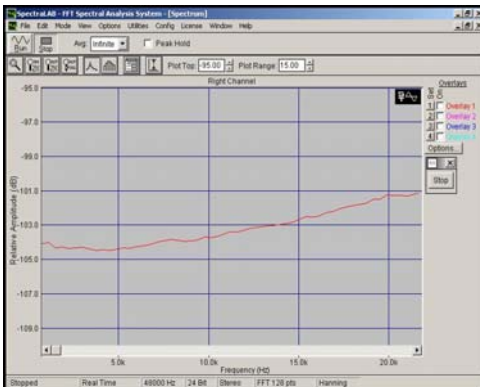
**MULTI-TONE ANALYSIS - QUICK TEST**

A REAL WORLD APPROACH TO AUDIO TESTING. SIGNALS CONSIST OF SYNCHRONOUS MULTIPLE SINE WAVES OF KNOWN AMPLITUDE AND PHASE. A SINGLE ACQUISITION AND SUBSEQUENT FREQUENCY DOMAIN ANALYSIS PROVIDES SIMULTANEOUS FREQUENCY RESPONSE, DISTORTION AND NOISE MEASUREMENTS.



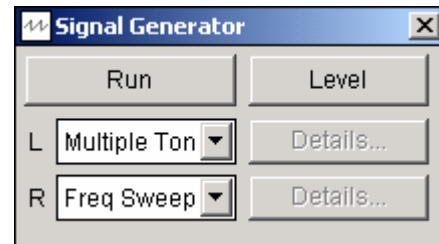
**SPECTRUM VIEW**

DISPLAYS LIN/LOG FREQUENCY SCALING FOR COMPLEX HIGH-RESOLUTION FREQUENCY ANALYSIS WITH REAL-TIME FREQUENCY, AMPLITUDE, CUSTOM MARKERS, SPECTRAL OVERLAYS, CURSOR MEASUREMENTS.



**CHANNEL SEPARATION VERSUS FREQUENCY**

MEASURES THE DEGREE TO WHICH A SIGNAL FROM ONE CHANNEL LEAKS INTO ANOTHER CHANNEL. INTERCHANNEL MEASUREMENTS DETECT SIGNAL ISOLATION BETWEEN CHANNELS SUCH AS BETWEEN THE TWO CHANNELS OF A STEREO SYSTEM. GREATER SEPARATION ADDS DEPTH AND SPATIAL SENSE TO THE SOUND FIELD.



**SIGNAL GENERATOR** – INTEGRATED SIGNAL SOURCE PRODUCES A VARIETY OF TEST SIGNALS INCLUDING SIMPLE AND ADVANCED COMPLEX TONE, NOISE, PULSE, FUNCTION & ARBITRARY WAVEFORM GENERATION WITH VERSATILE HIGH QUALITY WAVEFORM SELECTION; FEATURING MONO/STEREO GEN MODES – SELECTABLE SINGLE CHANNEL/DUAL CHANNEL TEST MODES.

# TIME DOMAIN MEASUREMENTS

## REAL - TIME ANALYSIS

— CUSTOMIZEABLE CHARTS, SIMULTANEOUS VIEWING OF WAVEFORM DATA —

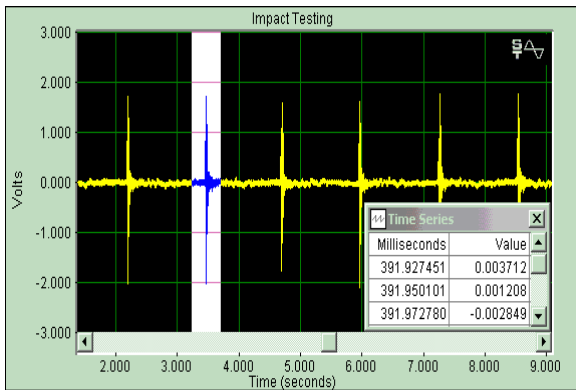
The advanced Time Series Views display the raw digitized audio data and is similar to an oscilloscope display with the amplitude shown on the vertical axis and time-base on the horizontal axis.

**Channel Selection:** Changes the display mode from single channel (mono) to dual channel (stereo) configuration (Left, Right, Left/Right, L-R, L+R, X/Y).

**Plot Type:** If Amplitude (linear) is selected, the display is similar to an oscilloscope (the data is scaled linearly around the centerline). When the Energy (logarithmic) option is selected, the data is scaled in Decibels with 0 dB representing 100% full scale. The actual scale values can be modified by using the calibration option.

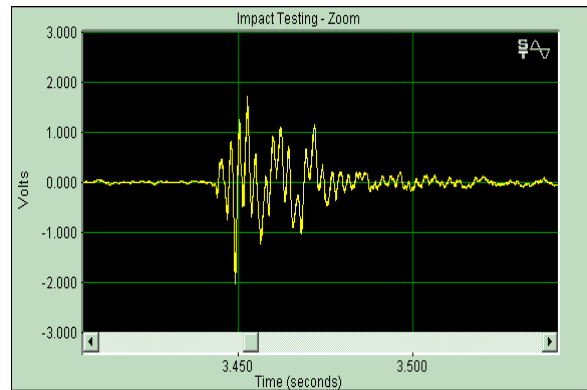
**Plot Top/Range:** The Plot Top and Range values determine the amplitude axis scale values. When the amplitude (linear) option is selected, the Plot Top value determines the upper and lower plot limits and the Plot Range value is not used. When the Energy (logarithmic) option is selected, the Plot Top is the value at the upper edge of the plot and the lower edge of the plot is equal to the Top value minus the Range value.

**Real-Time Mode:** Displays the latest 60 seconds of acquired data. The horizontal scaling is in seconds relative to the start of the file. Double clicking with the left mouse button anywhere in the plot will move the current file position to the pointer location. Also, the spectrum corresponding to the new pointer location will be computed and displayed in the spectrum view.



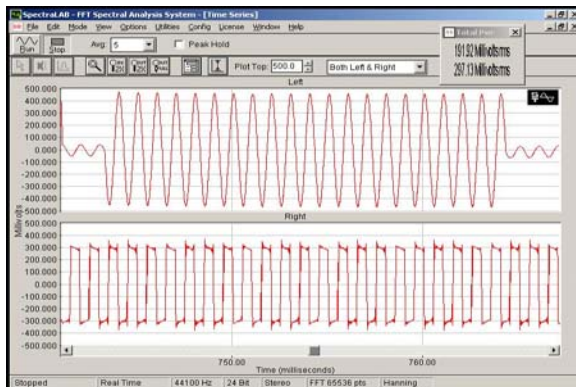
**ADVANCED TIME DOMAIN ANALYSIS**

REAL TIME POPUP SPREADSHEET VIEW + SLICE ANALYSIS  
CUSTOM CHANNEL LABELS + CUSTOM COLOR DISPLAY OPTIONS



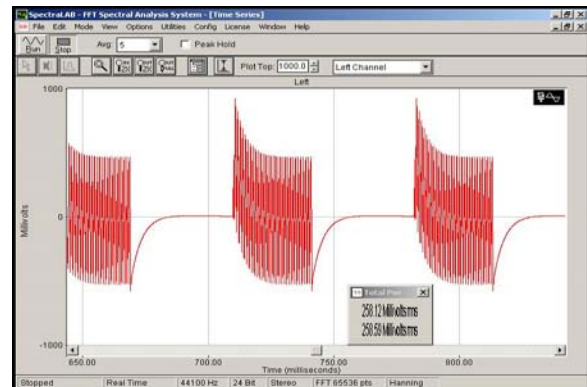
**TIME ZOOM ANALYSIS**

MAGNIFIED HIGH RESOLUTION MEASUREMENTS  
DETAILED VIEWS AND PERSPECTIVES.



**INDEPENDENT DUAL SCOPE MODE**

SIDE BY SIDE COMPARISON VIEWS  
SINE & SQUARE WAVE ANALYSIS



**TONEBURST — COMPLEX WAVE ANALYSIS**

ACCURATE TIMING MEASUREMENTS

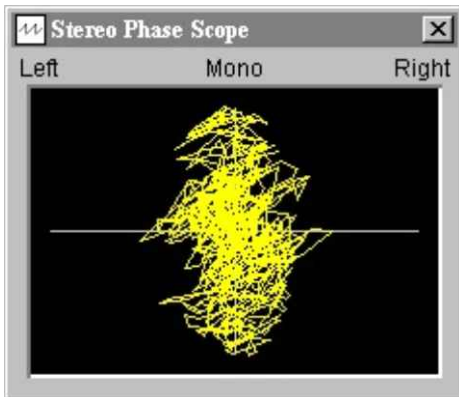
## PHASE ANALYSIS TOOLS

### REAL-TIME DYNAMIC MONITORING

- ADVANCED PHASE ANALYSIS OF SIMPLE AND COMPLEX SIGNALS IN THE SOUND SPECTRUM -

**Phase Scope** mode displays a standard oscilloscope X-Y orientation (lissajous pattern) for real-time views of phase, polarity, missing channel detection and dynamic stereo separation monitoring.

**Stereo Image/Vector Scope** mode evaluates the association of two separate channels or stereo signals and displays a dynamic perspective of the overall sound field image. The advanced phase tools are ideal for analysis of audio – broadcast, recording, film, live sound/final mix-down, demodulated radio spectrum.



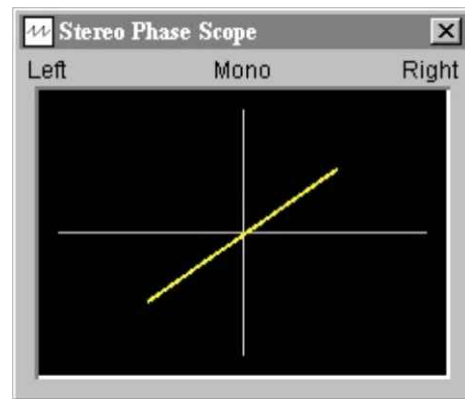
**STEREO PHASE SCOPE** — PROVIDES THE POPULAR X/Y SCOPE MODE FOR MONITORING IN PHASE/OUT OF PHASE CONDITIONS, DYNAMIC STEREO SEPARATION AND REAL-TIME MONO COMPATIBILITY VERIFICATION.



**STEREO IMAGE SCOPE** — USE THIS MODE WHEN MIXING MUSIC/SOUND. PAN AND DIRECT YOUR AUDIO SIGNAL SOURCES IN THE STEREO SOUND FIELD. ALSO VERIFY MONO COMPATIBILITY. IN THIS VIEW L/R SIGNAL ARE PANNED TO THE CENTER EQUALLY.



**MISSING CHANNEL SENSOR** — THE SCOPE PATTERN ABOVE INDICATES LOSS OF RIGHT CHANNEL INPUT SIGNAL. THIS IS ALSO WHAT THE DISPLAY WOULD LOOK LIKE IF YOU PANNED A SIGNAL SOURCE TO THE LEFT.



**MISSING CHANNEL SENSOR** — THE SCOPE PATTERN ABOVE INDICATES LOSS OF LEFT CHANNEL INPUT SIGNAL. THIS IS ALSO WHAT THE DISPLAY WOULD LOOK LIKE IF YOU PANNED A SIGNAL SOURCE TO THE RIGHT.