NEWS

Bay Acquisition & Analysis System (BARS)

Is the foundation product that supports an increasing range of application-focused solutions that are designed for single push button operation. Once the measurement set-up is loaded the acquisition of data and all subsequent processing is automatic. Where it is both appropriate and safe testing can now be reliably completed by one person; dramatically improving productivity. Time series (raw) data is always saved to allow additional post processing and data validity checking.

CHARM

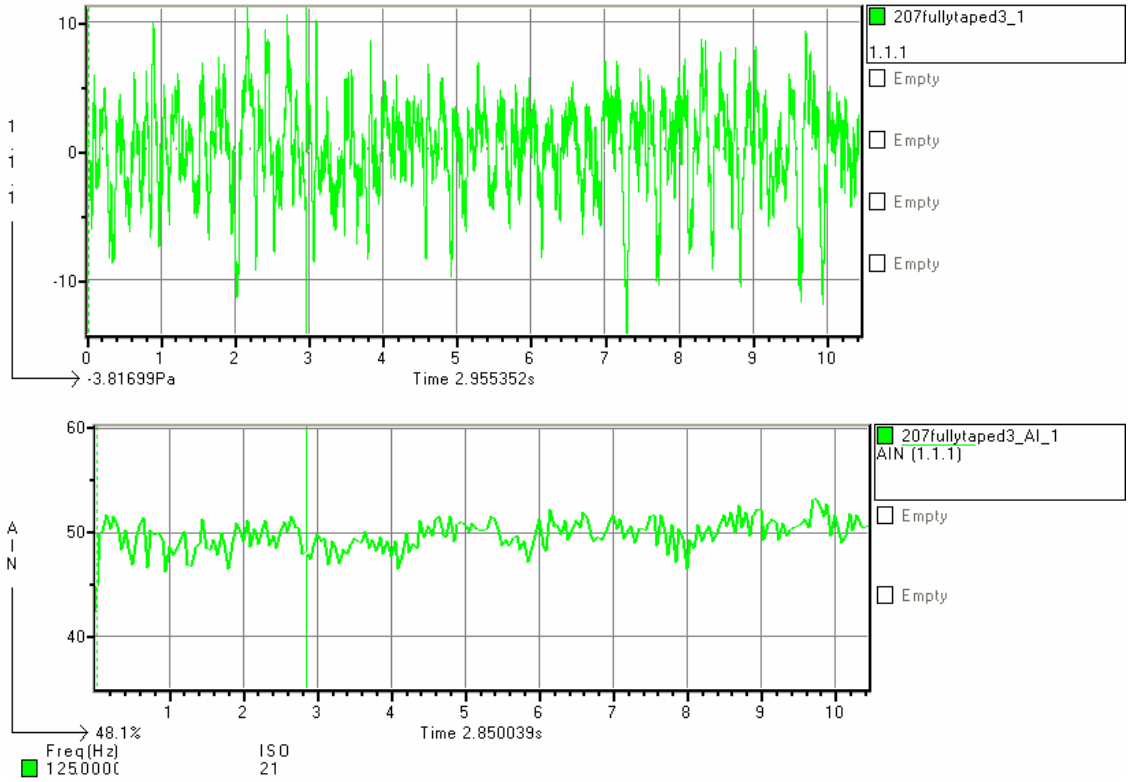
Calculation **H**and **Arm** Vibration exposure – The **CHARM** personality module when added to BARS gathers X,Y,Z acceleration data from a tri-axial accelerometer. The module automatically stores the time history of each channel while simultaneously displaying the X,Y,Z + Vector Summed acceleration levels. The recorded data is then available for detailed frequency analysis to help diagnose the problem.

STI & RASTI

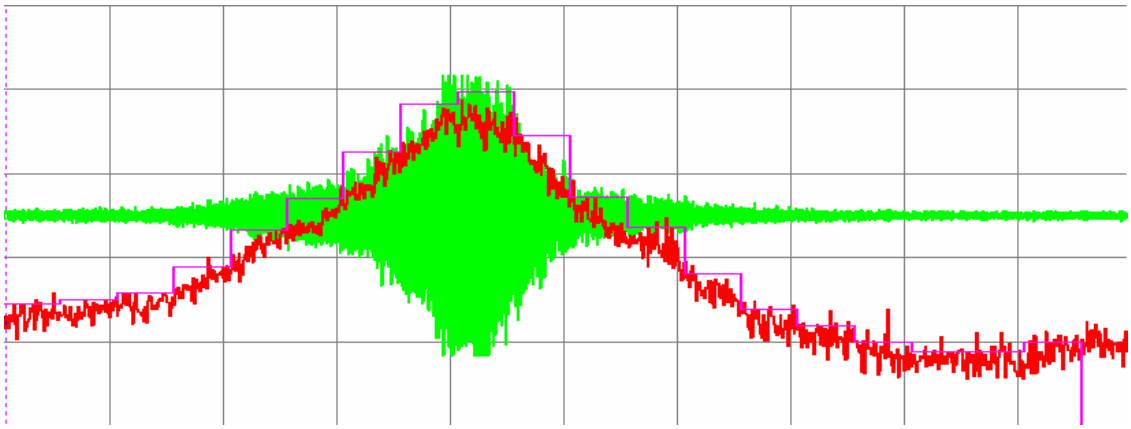
Speech **T**ransmission **I**ndex - **STI**
Room **A**coustic **S**peech **T**ransmission **I**ndex – **RASTI**
Both of these systems allow a physical space to be evaluated for speech transmission; these tests are advisable if not mandatory for all public address and emergency public address systems. The both systems generate a complex test signal that is injected into the Public Address system (PA). The single or multiple microphones are then positioned within the space to be evaluated. The signal is sampled and the STI or RASTI result calculated. The very portable BARS system, the 4-channel system including the full function micro Sony VAIO PC weighs 1kg, can be carried over the shoulder, see the lawn mower picture above.

Articulation Index

Articulation **I**ndex. **AI** is in many ways the automotive industries response to RAST and STI but instead of actually measuring the transmission and reception of a speech like signal the AI approach is to measure just the interfering noise and then calculate its likely affect on speech. The traditional way of doing this has been to record the time history and then compute 1/3rd Octave spectra from which the AI weighting factors can be applied and an AI score computed for each road speed or engine rpm. This type of AI calculation is supported but a direct AI filter has been developed that shows the AI level as a time trace. The result is that the engineer can listen and simultaneously see the AI score.



Equivalent level Leq The continuous tone that has equal loudness to the time varying signal. Calculation of the Leq level from a time history with variable integration time. The system allows the user to see both the original waveform and the Awt level while displaying the Leq



All of the new acquisition systems use either the Sony EX, for large channel counts > 24, or BARS for channel counts from 4 to 24.

Radio Linked Microphones.

The Bay Radio Link is a robust phase modulated analogue system with 15 separate channels. The system operates in a European licence free band and hence can be used without applying for a transmission license. This is a major advantage as the application process has to be repeated for each site. The system offers flat to +/- 0.5dB frequency response from 50Hz to 6.5kHz and typically +/- 3.5dB from 30Hz to 15kHz. Range with standard antenna is 200 metres and with high gain antenna >600metres.

Applications:
Any acoustic measurement that will include A weighting will be very little affected by the lack of signal below 30Hz. This is because the Awt curve reduces frequencies below 30Hz by at least 40dB. Vehicle Pass-by noise is a good match as the microphones and transmitters are beside the road with the receiver and data acquisition system inside the vehicle.