AcSoft

SOUND AND VIBRATION

Sensors and Instrumentation for the Professional Engineer

Applications

Environmental Noise Management

Noise in the environment affects us all, whether it is your next door neighbour's dog barking, or that annoying whine from a distant power station. Measuring environmental noise in a meaningful way can be difficult, and many descriptors have emerged to try to quantify annoyance by using temporal or frequency analysis.

Sound Quality Analysis
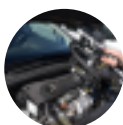
Reducing noise & vibration has long been an aim for the development engineer, and in many cases levels have been reduced so that many products report very similar results. It's now becoming clear that it's not just level that counts, but also the quality of the sound from the machine. Is it rough? Does it sound tinny? Does it rattle? Does the sound it makes meet the expected customer perception of quality?

Electro-acoustic Testing

Electroacoustic transducers find their way into all corners of our lives, including mobile telephones, loudspeakers, hearing aids, in-car entertainment, headphones and microphones to name but a few. In these days of high volume production and quality control, a test system is needed to provide the answers quickly and accurately.

Multi-channel Analysis

There is often confusion between multichannel data acquisition and multichannel analysis. However, for reliable measurements of sound & vibration you need to be aware of issues such as filtering, anti-aliasing, simultaneous sampling, linearity, conditioning, the list goes on.

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Telecommunications Testing

Our lives are increasingly dependent on telecommunications, both for voice communication as well as for data. If you are reading this online then you are hooked up to the most complex and bewildering telecommunications network ever.

Acoustic Imaging
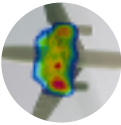
Acoustic imaging is one of the latest breakthroughs in the field of acoustic monitoring where the audio and visual images can be overlaid so you can literally "see the sound".

Building Acoustic Analysis

Measurements in building acoustics have often required specialised equipment to cope with the range of different parameters needed for a full sound insulation test. Now it's possible to do it all even on a hand-held instrument.

Frequency Analysis

Many suppliers offer an increasingly bewildering array of PC-based frequency analysers, typically using FFT. However, very few are optimised for sound and vibration applications, where not only high dynamic range and linearity are important, but in many cases transducer conditioning is also required.

SINUS

SINUS Messtechnik is the world's leading manufacturer of portable, robust, versatile multi-channel sound and vibration analysers. Their corporate philosophy of modular concepts and open systems enables them to offer an impressive range of acoustic and vibration measuring solutions at a very high technical level.

Their products include the Soundbook MK2; a powerful 24-bit analyser supporting up to 32 channels of acquisition. The hardware can be built into the rugged Panasonic ToughBook making it a very portable and tough measurement system. The same hardware is used in their Apollo 2 or 4 channel acquisition box which allows you to use any laptop as long as it has a USB socket.
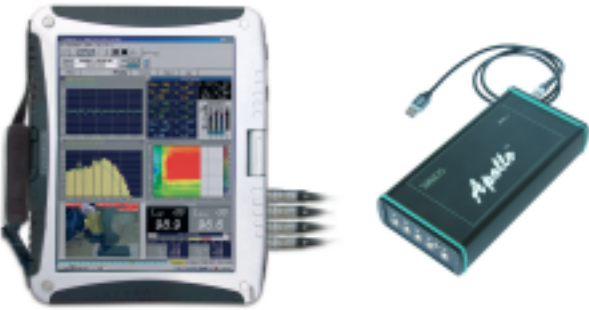
All SINUS hardware can be used in conjunction with their universal software package, SAMURAI. SAMURAI features excellent display capabilities not only during the measurements but also for post-processing your measurement results. The basic principle of the software is that virtual measurement instruments provide data for activated measurement channels and these virtual instruments can provide sound levels, spectra, time signals, speed, RPM, transfer values, video, slow channels and many other things. Simultaneously the data is stored in synchronous data streams.

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gfai tech

See the Sound

gfai tech is part of the world renowned GFaI (Gesellschaft für angewandte Informatik e.V.) based in the Berlin-Adlershof science park. gfai tech was setup to develop and manufacture the Acoustic Camera and is now a leader in this exciting field.

Using an array of microphones, the system uses a beam-forming technique to locate the sources of sound and superimposes an acoustic image on an optical image taken at the same time. The acquisition is high-speed so that images can be taken live or alternatively longer 'exposures' reveal more detail and allow more complex post-processing. Several arrays are available depending on the frequency range and size of source. For example, the Star array uses three large arms to space the microphones for large environmental sources such as wind turbines or factories whereas the general purpose array is ideal for measurements on car engines or computing devices and there's even a small array for measurements on devices like mobile phones.

Microflown Technologies

Charting sound fields

Microflown Technologies

Reduce the pressure in your work.
Go for particle velocity

Microflown Technologies are based in the Netherlands and developed the unique Microflown probe which directly measures particle velocity. Any sound field is described by two complementary acoustic properties, the scalar value 'sound pressure' and the vector value 'particle velocity'. In the acoustic near field, acoustic particle velocity is the dominant acoustic property. The Microflown is the world's first and only MEMS technology based sensor that can measure acoustic particle velocity. By measuring the temperature difference across two extremely thin platinum wires placed in parallel, this extremely fast mass flow sensor is capable of monitoring the movement of air particles.
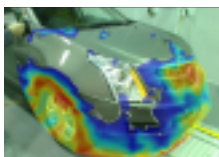

Microflown products include 3D Scan and Paint which is ideal for sound source localization; a critical requirement from new product development right through to end of line production control. This is a new fast tool to help visualize stationary sound fields in a broad frequency range. Ideal for use where anechoic conditions are not applicable; for example in an industrial manufacturing environment, an engine bay or a car interior.

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Genesis

Genesis are based in France and produce software for sound quality, psychoacoustics and sound design. Whether you design phones, in-car entertainment systems, trains, aircraft, helicopter flight simulators, immersive virtual reality or anything in between then Genesis' world leading software can help you improve the sound quality of your product.

Their LEA software paves the way to target sound definition, brand sound creation, subjective and objective testing, component separation, troubleshooting and sound dataset preparation. For consumers, the sound of a product triggers a sensorial and emotional response, which has a direct impact on their buying decisions. A product's sound provides information about the quality of the materials used and its craftsmanship. This is a selling point for your product and it is crucial to be able to control its impact.
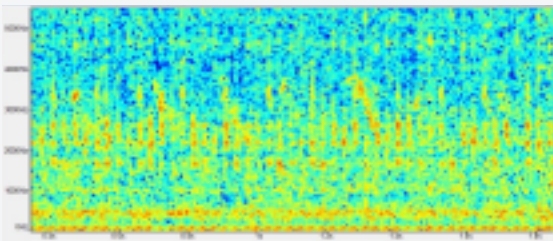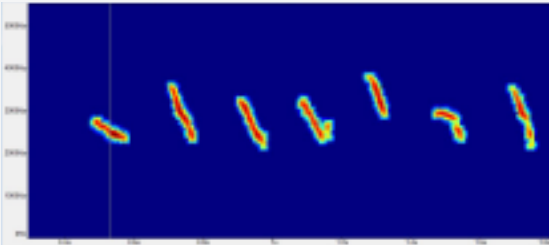
MicrodB

MicrodB are a French company that are part of the VibraTec group. They specialise in noise source identification and are experts in signal processing and measurement techniques. They have developed their own hardware and software for noise source location and measurement systems that include the latest MEMS (Micro Electro Mechanical System) technology.

Noisescanner from MicrodB uses real-time focus processing to deal with synchronized audio and video measurements. It provides a revolutionary scanning tool that sits between a measurement microphone and an acoustic camera. It was created to give complete autonomy to the technician or engineer looking for a noise source providing an easy to use solution for well-known difficult applications such as acoustic leaks, BSR (buzz squeak and rattle), hot spots and quality control.

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![Listen logo]

Listen Inc

Listen Inc. is a world leader in audio and electroacoustic test and measurement. Founded in 1995, when its flagship product, SoundCheck® was launched, the company has pioneered electroacoustic measurement techniques for 20 years and sets the standard in the marketplace with powerful and innovative test methods and algorithms, fast and flexible testing, and excellent service and customer support.

SoundCheck Software is the heart of a SoundCheck test system. It generates all the test signals, performs analysis and displays results according to the user's configuration. While it is an extremely powerful and flexible product, its capabilities can be described in 3 parts:

- **Test Sequences –** how tests are configured by the operator

- **Virtual Instruments –** software implementation of standard audio test equipment

- **Data Analysis –** the various analyses that SoundCheck can perform on your data
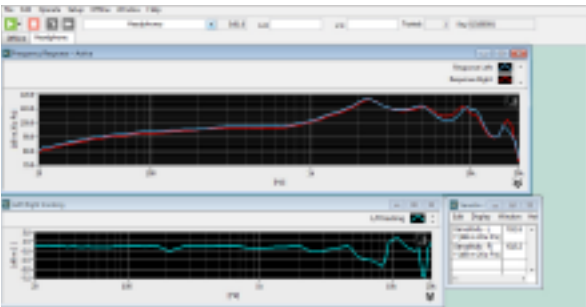
SEMEX EngCon

SEMEX–EngCon was founded as an engineering and service company offering products and services in the field of seismic monitoring and vibration measurements. They are very experienced engineers in this area and have extensive technical knowledge and project experience.

The MENHIR (Modular Enhanced Intelligent Recorder) device measures vibrations and shocks in an efficient and secure way. It makes complex tasks in structural dynamics, structural and vibration monitoring easy with customised solutions. All of these areas require robust equipment with high reliability recording, data transfer and analysis to handle high demands. MENHIR, in conjunction with the SDC software (Smart Data Center), guarantees secure collection, transmission and data analysis as a total solution. MENHIR's simple and intuitive operating concept allows anyone with minimal training to work successfully and quickly with the system.

The system can be scaled to meet your needs; whether you need only one measuring point or hundreds, MENHIR makes it easy. The innovative cloud solution "SDC Basic" is included as an integral part of the MENHIR system. An optional complete analysis module is also available that provides a tool for effortlessly comparing data to all common standards. Reports may be configured to your liking, automatically generated and transmitted electronically in adjustable intervals.

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Crystal Instruments

Founded in 1996, Crystal Instruments is a leading manufacturer of equipment for dynamic measurement, signal analysis, and vibration testing. Crystal Instruments is headquartered in Santa Clara, California, the centre of Silicon Valley.

The Spider–20 is a compact yet powerful dynamic signal analyser and digital data recorder. It provides four 24–bit input channels, and an additional tacho channel. This can all be controlled and displayed using a dedicated iPad app.

The CoCo is a handheld data recorder, dynamic signal analyser, and vibration data collector. The CoCo units are low cost, lightweight, battery powered handheld systems with unparalleled performance and accuracy.

LookLine

LookLine started as a group of electronic planners that had been working in the sector for over twenty years. Since 1998 they have developed and produced an innovative product line in noise sources with characteristics superior to anything else on the market.

Their noise sources include the EM50 Tapping Machine which uses an electromagnetic technique to drive the hammers; a totally silent method so no more mechanical cams rattling around causing noise and wear. Their dodecahedral sound source provides omnidirectional excitation according to all the latest standards. It can be driven from an external device like the SoundBook or an internal noise source that has been equalised for a flat response over the complete frequency range.

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Bedrock

"Bedrock" is the instrument manufacturing brand for Embedded Acoustics; based in The Hague, Netherlands and was founded by experts in speech, hearing and acoustics. Probably best known for developing the Speech Transmission Index, they were among the first to develop Active Noise reduction systems for hearing protection.

STIPA has now become the industry standard for measuring the Speech Transmission Index and the SM50 STIPAmeter is easy to use, accurate, reliable and affordable. With a touch screen and options for class 1 performance, this is definitely the most advanced STIPA instrument on the market. How could you get better than an instrument that was designed from scratch by the very team that invented STIPA!

SVANTEK

Svantek

Svantek in Poland are probably the world's most innovative designer and manufacturer of handheld sound and vibration monitoring instruments. For over 25 years they have led the field in the design and manufacture of handheld and installed sound and vibration instrumentation. All Svantek products are sold and supported by our sister company Svantek UK Ltd and their details can be found at www.svantek.co.uk

G.R.A.S.
SOUND & VIBRATION

G.R.A.S.

G.R.A.S is a Danish based company that was founded in 1994 by Gunnar Rasmussen. They are a world renowned designer and manufacturer of acoustic front-end products including microphones, pre-amplifiers and signal conditioning devices. All our G.R.A.S products are now sold and supported through our sister company; G.R.A.S. Sound and Vibration UK Ltd and their details can be found at www.gras.co.uk

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Accelerometers

We are able to offer you a wide range of accelerometers to complete your system from leading suppliers including Dytran, DJB and PCB. Whether you need piezoelectric accelerometers, dynamic pressure transducers or geophones, we can source the very best sensor for your needs. We also offer high temperature solutions with sensors withstanding up to 900°C
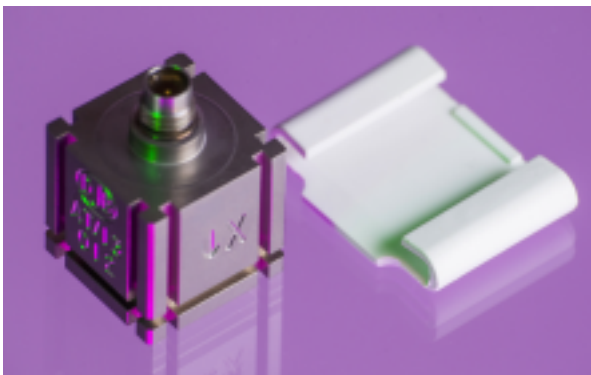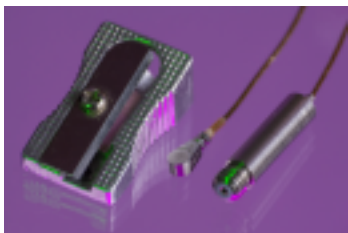
About Us

AcSoft Ltd was setup in 1994 by John Shelton as a specialist supplier and systems integrator for high-end noise and vibration systems, sensors and software.

Back in those days, recording raw signals to disk and real-time frequency analysis required high spec hardware and digital signal processing, but modern PCs easily outpace dedicated hardware of even a few years ago.

Building on contacts in the industry, and experience of advanced applications, we have put together a complementary range of products and software from top quality transducers through to the final analysis & reporting software.

AcSoft has now grown into a multidisciplinary company offering solutions to large multinationals and small consultancies alike, along with applications advice, to ensure maximum return on investment.

We pride ourselves in offering the very best in customer service and our customers come back to us time and again. We make sure that you get the best and most cost effective solution for your application and within your budget.

AcSoft is a key sponsor member of the Institute of Acoustics.

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