

June Edition Newsletter 2018



40 kHz 4ch Input unit



100 kHz 2ch Input unit



HT-5500 Handheld Digital Tachometer



GRAS RA0401 High-Resolution Ear Simulator



Acoustic Camera XS-56

Application:  
Measuring rotation unbalance of an excavator



## Automotive NVH Control Technology Conference

### International Conference on Automotive NVH Control Technology

S&V Samford & GRAS China participated the 2018 International Conference on Automotive NVH Control Technology in **Rosedale Chunshenhu Resort Hotel Suzhou**, during **10-11<sup>th</sup> May, 2018**. The Following are the highlights of the activities.



### GRAS 146AE The strongest link in your measurement chain

Every detail of the 146AE microphone set has been developed to handle even the most challenging test conditions, with materials and mechanical design carefully selected for optimal performance.



[Video of 146AE](#)

[Videos of G.R.A.S. HALT](#)

[Know More](#)

### Customer Visits

If you need our visit, please contact us at [sales@svsamford.com](mailto:sales@svsamford.com).

### About Us

**S&V Samford Ltd.**

[www.svsamford.com](http://www.svsamford.com)

We are devoted to provide quality and innovative solutions for Customers with interest in Sound and Vibration, Condition monitoring and Air Quality monitoring. With a team of passionate professionals, we provide dedicated support and continue education to our customers.

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### Monthly Feature Products

- CAE Software und System  
Acoustic Camera XS-56

-G.R.A.S  
High Resolution Ear Simulator for  
Hearing Aid

- Onosokki  
Application: Measuring rotation  
unbalance of an excavator



# CAE Software und System - Acoustic Camera XS-56

## Features

- Up to 100 acoustic pictures persecond over a broadband frequency .
- Up to 60 optical pictures persecond.
- Real-time processing with hig defination acoustic pictures .
- No analysis hadware (PC/Notebook) needed.
- No cables needed.
- Optimized array shape for high dynamic range.
- Online local sound.
- Exporting acoustic videos
- Easy-to-use
- Ultramobile, Flexible
- Robust
- immediately acoustic investigations e.g. Engine noise, Electronical seat adjustment...



OWL-INNOVATIONSPREIS  
MARKTVISIONEN  
2017

I-NOVO  
AWARDS  
WINNER  
2017



## CAE Software und System - Acoustic Camera XS-56

### Acoustic Camera - Bionic XS-56 microphone array

The Bionic XS-56 microphone array has a diameter of 27cm and consists of 56 microphones. The Optimized microphone distribution guarantees a perfect sound source localization and a high dynamic range. The seven detachable microphone arms (setup about 1 minute) make the system very mobile with a small package size. The data acquisition hardware is integrated in the acoustic camera so there is no need to use external measuring equipment. Using the handle on the acoustic camera makes the system perfect for mobile use. Typical applications are environmental measurement, leakage detection and squeak, buzz and rattle localization .

### CAE Acoustic Camera is The Winner of the i-NOVO AWARDS 2017 (OWL-INNOVATIONSPREIS MARKTVISIONEN 2017)

#### Technical Data

- Diameter : 270 mm
- Operation range: <33 dB to 120 dB with up to 40 dB dynamic
- Microphones: 56 MEMS-microphones, 24 bit resolution, Samplerate 48kHz, Frequency range 10 Hz – 24kHz.
- From 800 Hz with beamforming- methods; below with decreased resolution
- Fibre-reinforced polymer
- 2.6 Kg

#### Data acquisition

The data acquisition system is integrated into the hub which is used for mounting the microphone-arms. This offers the advantage that no cables are in the way. The measurement system is a National Instruments embedded-controller with real-time operating system and FPGA.

Number of Channels :112

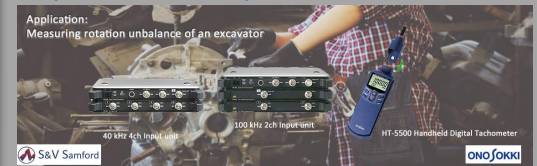
Synchronous sampling: Yes

Additional inputs : Trigger, Tacho(RPM)

Power supply : 12 V

## About CAE Software und system

<https://www.cae-systems.de/en/>



CAE have gained experiences in consulting in acoustics, structural dynamics, simulations and physical tests over the last 20 years. Our young, successful and dynamic team is specialized in developing acoustic- and vibration measuring systems, new measurement methods and special tests in particular focus on the Acoustic Camera.

We have a lot of customers from different branches e.g. mechanical engineering, consumer goods, home appliance, automotive, energy technology and aerospace.

As a partner of National Instruments we are working international. Our sales partners are representing us worldwide.

### The Smart Vision software is the perfect solution for newcomers to acoustics.

- Online analysis in real- time
- Up to 100 optical pictures per second
- Save acoustic-photo and acoustic- video
- Playback of local sound
- Runnable on windows tablets, PCs and Notebooks

## Reliable Measurements for Hearing Aids - GRAS High Resolution Ear Simulator



G.R.A.S

S&V Samford

### GRAS High Resolution Ear Simulator – RA0401/ RA0402 Ear Simulator

#### **Reliable measurements for hearing aids up to 20 kHz**

Advances in hearing aid design have made it desirable to increase the frequency range of hearing aids. This is why we have developed the High Resolution Ear Simulator. It offers a method for measuring up to 20 kHz with precision, consistency and good repeatability.

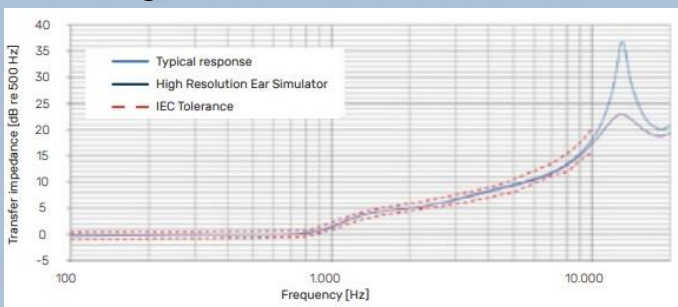
#### **Accurate broadband measurements**

The new High Resolution Ear Simulator thus meets the need for an accurate broadband measurement method – both frequency response and distortion measurements up to 20 kHz can now be made with confidence. The GRAS High Resolution Ear Simulator is therefore well suited as a high resolution supplement to the standardized 60318-4 ear simulator – or as a new reference tool for hearing aids manufacturers R&D testing and design verification.

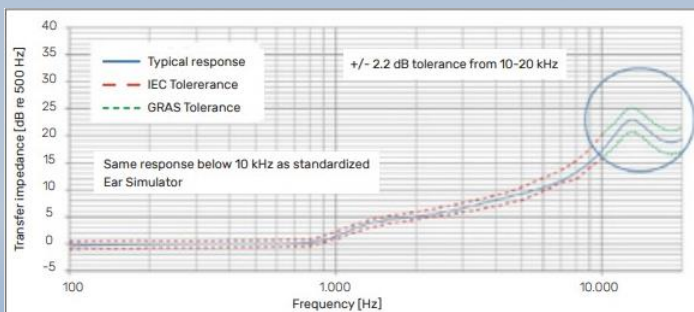
#### **Advantages**

The advantage of the resonance dampening are clearly visible when comparing the RA0045 Ear Simulator and new the High Resolution Ear Simulator (HRES).

#### **Comparison: The Standard 60318-4 ear simulator versus the RA0401/ RA0402 High Resolution Ear Simulator (HRES)**



#### **Typical response overlaid with the tolerances for the HRES**



Click [Here](#) for more details

### About G.R.A.S

<http://www.gras.dk/>

Establishment in 1994. G.R.A.S. have been 100% dedicated to developing and manufacturing high quality measurement microphones and related acoustic equipment.

G.R.A.S founded by the Danish acoustics pioneer Gunnar Rasmussen who for more than 60 years has contributed to the world of sound and vibration with his unique ideas and designs.

### Benefits

- Improved repeatability above 10kHz
- Measurements below and above 10kHz both in the same measurement setup
- The dampened resonance means better distortion measurements, even from as low as 3-5 kHz
- Minimized operator error and improved accuracy



**Application:**  
Measuring rotation unbalance of an excavator



40 kHz 4ch Input unit

100 kHz 2ch Input unit



HT-5500 Handheld Digital Tachometer



**Onosokki –**

**Application: Measuring rotation unbalance of an excavator**

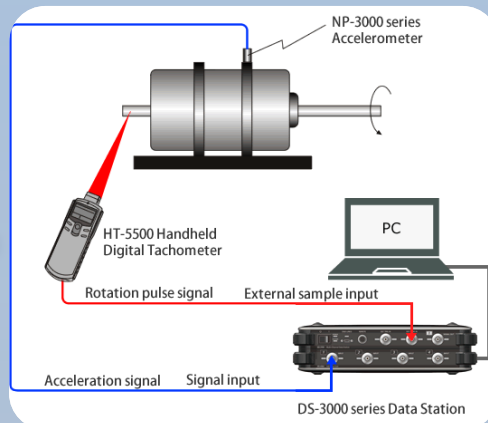
***This application shows how to measure the unbalance vibration of an excavator.***

***As the damage or breakage of the rotating shaft caused by unbalance vibration is very dangerous, excavator should be maintained periodically.***

Use the HT-5500 digital hand tachometer as a rotation detector to select the rotation pulse of the rotation axis and input it to the external sample pulse of the Data Station DS-3000.

**System configuration**

Model name	Product name
1.DS-3000 Series	Data Station
2.HT-5500	Handheld Digital Tachometer
3.NP-3000 Series	Accelerometer



**About Ono Sokki**

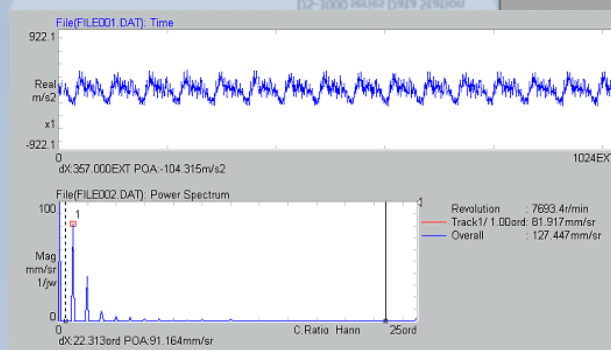
<https://www.onosokki.co.jp/English/english.htm>

Ono Sokki is a measuring instrument manufacturer focused on the tasks of applying digital technology to measurement applications, and has a proud history in that field, including development of Japan's first digital counter 40 years ago, and myriad products using digital technology.

Their products, reputed to be "World First" or "Industrial Standard" in various fields, reflect their constant pursuit of original technologies. Under this motto of "Change & Challenge for Solving the World's Toughest Problems", ONOSOKKI aim to build a network-oriented company supported by human resources backed by high technologies.

**Example of analysis data**

The Figure at the right shows data when rotation unbalance vibration is occurred in the excavator. If Imbalance occurs, vibration of the Primary rotation will increase. In this example, initial value is 5mm/s of vibration, but the value after rotation unbalance occurred is 16.3 times, increased to 81.917 mm/s.



**Product details:**

- [1. DS-3000 Series](#)
- [2. HT- 5500](#)
- [3. NP-3000 Series](#)

Generally, as a guide, at 1000 Hz or less of speed or displacement signal, roughly 3 times the initial value (good state) is attention level and 9 times or more as the dangerous level (see ISO 2372) .