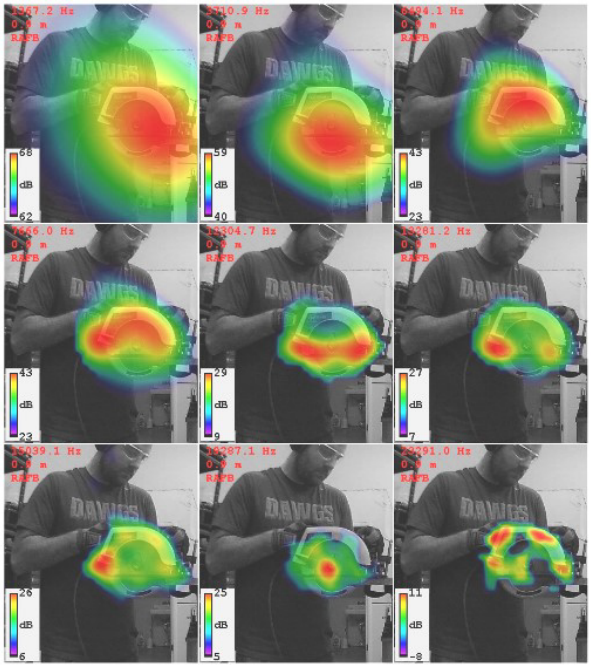
ACAM 100 ACOUSTIC ARRAY

Sound is everywhere...
...let us help you see it.

WATCH
Create an acoustic image, overlaid on an optical image, to visualize sound sources. Analyze at different frequencies.

LISTEN
Focus on sound from one or more sources. Reject sound from other sources.

FIND
Watching and listening work together: *watch* for hot spots in the acoustic image and then focus to *listen* to the sounds from those hot spots.



The ACAM 100 acoustic array makes acoustic imaging technology affordable for a wide range of applications.

Signal Interface Group

www.signalinterface.com

Sound is important in our environment, but it is hard to locate its sources.

***See** sound sources with acoustic arrays from Signal Interface Group.*

See Acoustic Imaging Videos
www.signalinterface.com/videos.html

ACAM 100 Includes

Acoustic Camera

The ACAM 100 Acoustic Array has 40 digital microphones on a 40 cm x 40 cm plate. The microphones are sampled simultaneously, providing **accurate phase information** for digital signal processing algorithms.

An acoustic membrane protects each microphone from dust and moisture.

Optical Camera

The optical camera in the center of the array returns 5M-pixel images.

Digital Inputs and Outputs

The ACAM 100 Acoustic Array has two isolated digital inputs and two isolated digital outputs. These can be used for **synchronization** with data acquisition systems, and one of the inputs can be used for a tachometer.

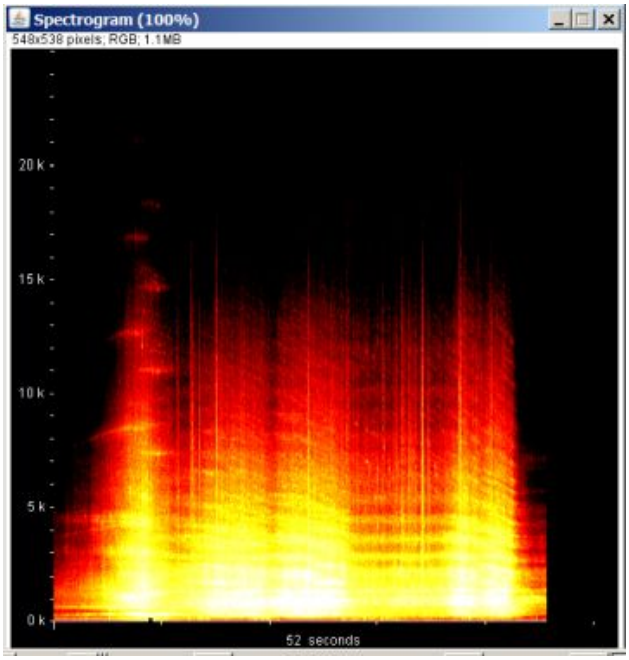
One Cable

The ACAM 100 requires just one USB cable for microphones, optical camera, digital I/O, and power.

The ACAM 100 is ideal for **mobile** applications. Setup takes just a few minutes.

Mounting Hardware

The ACAM 100 mounting hardware conforms to the 100 x 100 mm VESA standard. Wall mount, tripod, and desk mount adapters are available.



Contacts Worldwide

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Acoustic Imaging with BeamformX

A Complete Solution

Signal Interface Group offers a complete solution for acoustic imaging: the ACAM 100 Acoustic Array, the SIG Windows driver, and the BeamformX program from OptiNav.

OptiNav, a world leader in acoustic imaging software, developed BeamformX specifically for SIG acoustic arrays.

Plug in the USB cable, install the software, and see useful results within minutes:

- Display acoustic images in real time
- Display the spectrum
- Display the spectrogram, the history of the spectrum with intensity encoded as color
- Save raw data for post-processing
- Read and process files of raw data
- Save acoustic videos in mp4 format
- Replay events of interest identified in the spectrogram
- Listen to the sound from a region of interest
- Generate acoustic images for a range of frequencies

And much more.

Software

Software provides the interface between a Windows PC and an ACAM 100 Acoustic Array. How do you prefer to work?

↖ All-in-one:

with BeamformX software included for a complete system for end-users

Developer-mode: ↗

with an API providing access to all of the array's capabilities in an open platform for developers, system integrators, and researchers

Acoustic Imaging Platform

An Open Source Tool for Developers

For developers, the ACAM 100 Acoustic Array is a low-cost sensor with an open development platform for Windows applications.

As an application developer, you know how you want to acquire data and how you want to use your data. SIG provides a Developer's Interface that lets you get on with your work.

API: The Developer's Interface

The Developer's Interface includes a C/C++ API (Application Programming Interface) for developing high performance applications, a Java API for rapid prototyping, and support for logging and playback. Source code for typical applications is included.

The developers' interface includes calls to

- Configure an acoustic array
- Read time domain data
- Read frequency domain data
- Read optical camera data
- Write to and read from raw data files

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ACAM 100 Specifications

http://www.signalinterface.com/specs.html

ACOUSTIC CAMERA SPECIFICATIONS	
Microphones	40 digital MEMS microphones
Microphone Resolution	24-bit
Microphone Frequency Response Curve	From 60 Hz to 15 kHz, within 3 dB
Microphone Frequency Limit	Up to about 23 kHZ, with reduced accuracy
Programmable Sampling Rates, samples per second per microphone	50K, 40K, 25K, 20K, 12.5K, 10K
Anti-Aliasing	Digital lowpass filters
Maximum Sound Pressure Level	112 dB
OPTICAL CAMERA SPECIFICATIONS	
Optical Camera	5M pixels
PROCESSOR AND MEMORY	
Processor	On-board FPGA
Memory Buffer	256 M bytes
FFTs	Programmable block size from 64 to 2048 samples Calculated in real time at all sampling rates
DIGITAL I/O	
Digital Inputs	2, isolated
Digital Outputs	2, isolated
COMMUNICATIONS AND POWER	
Communication	USB Port
Cable	2m USB cable
Power	USB Port, maximum current 500 mA
ISOLATION	
Isolation	Isolated sections for microphones and digital input/output.
PHYSICAL SPECIFICATIONS	
Mounting Hardware	Conforms to 100 x 100 mm VESA standard (Wall mount, tripod, desk mount adapters optionally available)
Weight	3 kg (shipping weight 6 kg)
Operating Temperature	0 to 50 degrees C
Storage Temperature	-20 to 65 degrees C
PC SPECIFICATIONS (PC NOT INCLUDED)	
Processor (required)	64-bit
Processor (recommended)	6th generation Intel Core-i7 with 8 Gb of DRAM
Processor (minimum)	4th generation Intel Core-i5 or equivalent with 8 Gb DRAM
Hard Drive	128 Gb SSD or larger recommended, allow about 1 G byte for two minutes of raw data
Operating System	Windows 7, Windows 8.1, Windows 10

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