sensor & calibration tips

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Your one-stop sound & vibration shop

Welcome to our next issue (#10)-

The team at The Modal Shop and PCB Group have been sending out monthly training/tips for dynamic sensors for about a year now! If you are new to our newsletter, please enjoy this short communication, share it with a colleague and have a look at the archive links below where you'll find all the back issues with their wealth of information. We're glad to have you on board!

Join Our Mailing List!

Tip of the Month

Removing adhesive mount sensors with acetone

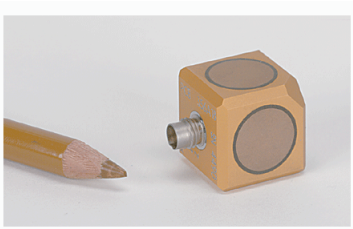
Cyanoacrylate adhesive (superglue) is often used for bonding accels, in both calibration and testing applications. When it is time to remove the accelerometer, apply some acetone (fingernail polish remover) prior to breaking the bond. It softens the adhesive, significantly reducing the mechanical shock from "snapping" the accelerometer free and aids in cleaning up the adhesive's residue. Keeping a residue free mounting surface will ensure the best possible frequency response from your accelerometers on the next job.

Quick Links

NCSL
IMEKO
NIST
PTB
Wiki on uncertainty

The Modal Shop website
PCB Piezotronics website

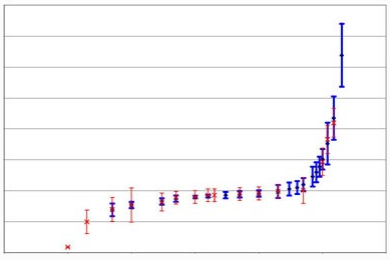
Facts about Triax



By far, the most popular configuration of piezoelectric accelerometers for large/multichannel users is the integral triaxial accelerometer. The implementation of a single 4 pin sensor signal connector allows for a common ground and overall 3 to 1 reduction in cabling. While on the surface, this may seem trivial, consider that many typical users are now in the hundreds of channels for standard vibration tests in the automotive and aerospace industries. This is also relevant to the consumer appliance/durables market space where sound and vibration quality has stepped to the forefront of marketability and customer preferences.

Click here to read the rest of the article about triaxial accelerometers
(http://www.modalshop.com/test_calibration.asp?ID=216)

Uncertainty Redux



As we discussed in the previous article, there are two types of calibration uncertainties, random and systemic. Since a calibration lab is responsible for correctly reporting their uncertainty, it is important to understand the differences between these types of contributors and how each can be considered.

As a framework to differentiate the two types, consider that uncertainties caused by random contributors lend themselves to be determined by statistical measurement methods whereas, uncertainties that are

Newsletter Archive

sensor & cal tips #1 - Basics of Accelerometer Function; How Standards Link Together

sensor & cal tips #2 - Shear, Compression, Flexure; ISO 16063 Overview

sensor & cal tips #3 - Accelerometer Transduction Types (PE, PR, VC); Laser Primary Calibration

sensor & cal tips #4 - Quartz v Ceramic; Piggyback Calibration

sensor & cal tips #5 - Similarities between ICP & Charge, Shock calibration method

sensor & cal tips #6 - Ideal v Real World Accelerometer Behaviors; Primary v Transfer Calibration

sensor & cal tips #7 - The Trouble with Cables; How to Maintain Calibration Integrity

sensor & cal tips #8 - What is ISO17025 all about? What makes a good modal array accelerometer?

sensor & cal tips #9 - Seismic accelerometer for low frequency measurements; Uncertain about your cal?

systemic in nature need to be surveyed versus more accurate methods. As an example, in accelerometer calibration...

Read the rest of the article on calibration uncertainties
(http://www.modalshop.com/test_calibration.asp?ID=215)

We appreciate your interest and are glad to be providing regular information to help you in your dynamic testing and calibration needs. If you have any questions you would like answered or have a topic you would like to see covered, please contact us and we'll be glad to help out. Your question may even be featured in a future newsletter...

Sincerely,

Michael J. Lally
The Modal Shop
A PCB Group Company

Forward email