



**Welcome to Issue #79**

Welcome to this month's issue of "Dynamic Sensors & Calibration Tips." Coming out of a very long winter, we are happy to see more sunshine in the northeastern and midwestern USA. While the bears were hibernating, your friends at The Modal Shop have been very busy innovating! [Click here for a brand new comprehensive TMS catalog](#), where you can find new products like portable vibration calibration systems and a full range of vibration excitation products.

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**Tip of the Month:  
How to Properly  
Wind Cables**

Cables have a shielding that is usually a mesh screen to protect from interference. If you're constantly introducing twists, you begin to wear down this shield that works to prevent electrical interference from entering your signal path. Once you've destroyed the shield it can't be fixed and you need to replace the cable.

[Watch This Video Showing How to Properly Wind a Cable](#)

**Technical Exchanges**

[Dynamic Sensors & Calibration Seminar and Open House](#)  
May 14 at The Modal Shop  
Cincinnati, OH

[NCSLI](#)

**Your Feedback on Digital Smart Sensing**

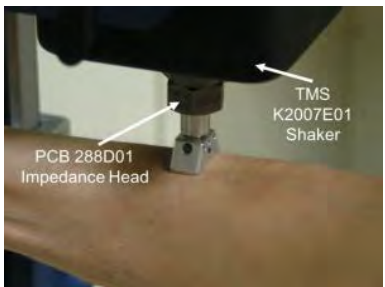


Thank you to the many readers who responded to last month's request for input on the concept of digital accelerometers. We were flooded with input and suggestions for dozens of single channel applications. Among these were: field measurements; bearing/machine health monitoring; dynamic product in-line quality control; human vibration factors; medical implantation (joint surgical feedback); and civil infrastructure monitoring. By far, the most common thread was...

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modalshop.com/calibration.asp?ID=950

**Ohio University Uses Shaker on Humans in Bone Density Testing**

Ohio University's Department of Biological Sciences is using an electrodynamic shaker on human beings. Lyn Bowman, Research Assistant Professor under Professor of Biological Sciences Anne Loucks, explains that his department is using the shaker for Mechanical Response Tissue Analysis (MRTA), a method for measuring bone strength in humans. His research group is focusing on the ulna, the long bone on the little finger side of the forearm. In MRTA data collection, bones are oriented...



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modalshop.com/calibration.asp?ID=945

[Washington/Oregon/Western  
Canada Regional Meeting](#)

May 20-21  
Seattle, WA

[Successful Measurement of  
Dynamic Force, Pressure and  
Acceleration](#)

By Pat Walter at PCB  
May 20-22  
Buffalo, NY

[SAAMI Ballistic Pressure Sensor  
Training](#)

By Bob Metz at PCB  
June 18  
Buffalo, NY

[Sensors Expo](#)

June 24-26  
Chicago, IL

**Quick Links**

[PTB](#)

[NIST](#)

[ISO TC 108](#) - Mechanical vibration,  
shock and condition monitoring

[ISO TC 108/SC 3](#) - Use and  
calibration of vibration and shock  
measuring instruments

[ISO TC 108/SC 6](#) - Vibration and  
shock generating systems

[SAVE \(Formerly SAVIAC\)](#)

[Vibration Institute](#)

[Equipment Reliability Institute](#)

[\(ERI\)](#)

[TMS Video Vault](#)

[Learn More Calibration](#)

**Previous Newsletters**

[Dynamic Sensors & Calibration  
#78](#)

USB Smart Sensor for Vibration;  
University of North Dakota Uses  
Shaker in Unmanned Aerial Vehicle  
Testing

[Dynamic Sensors & Calibration  
#77](#)

Why is it Important to Calibrate my  
Microphones?; KU Leuven Designs  
Impedance Tube Alternative

**Select Newsletter Articles  
by Topic**

[Function and Structure of  
Accelerometers](#)

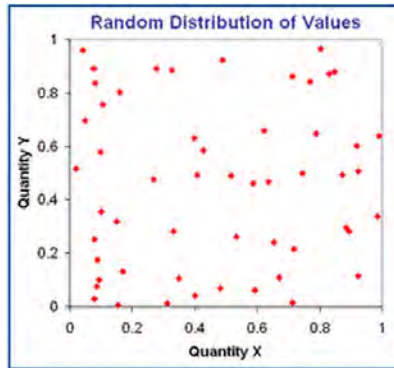
[Similarities Between Charge and  
ICP Operation](#)

[Selecting Accelerometers for  
Mechanical Shock](#)

[Master List of Topics \(T.O.C.\)](#)

**PCB Group Companies**

**Blast from the Past:  
Statistical Methods of Calibrating Uncertainty**



In order to properly evaluate an uncertainty contributor by a statistical method, any variables related to the contributor must be allowed to change. Random uncertainty contributors are often the easiest to quantify using a statistical method because the only variable is time.

Making repeated measurements of the same sensor and determining the standard deviation of the results of these measurements allows time to vary and the results to conform to a Normal (or Gaussian) Distribution Model. Another contributor that can be evaluated statistically is...

[Click to read full article](#)

[modalshop.com/calibration.asp?ID=222](http://modalshop.com/calibration.asp?ID=222)

Thanks for joining us for another issue of "Dynamic Sensors & Calibration Tips." As always, please speak up and [let us know what you like](#). We appreciate all feedback: positive, critical or otherwise. Take care!

Sincerely,

Michael J. Lally  
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A PCB Group Company  
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[The Modal Shop Systems & Service Website](#)  
[PCB Piezotronics Sensor Website](#)  
[IMI Monitoring Website](#)  
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[PCB Load & Torque Website](#)  
[SimuTech FEA Website](#)

