

sensor & calibration tips



www.modalshop.com

www.pcb.com

Your one-stop sound & vibration shop

Greetings,

Welcome to issue #42 - January/February

Wow! What a busy start to the New Year! Are you feeling the economy continue to ramp up too? Your customer requests keep pouring in to PCB Group and The Modal Shop, and I have to confess, January was so busy we had to take a break from the newsletter... I hope your business is growing too and that you are also "suffering from the good problems of growth!" You'll note in this issue we are beginning to use more video content and are making it easier for you to get the information you need to solve your dynamic measurement challenges. Check out the [video homepage](#) on our website to quickly access the latest in product and application descriptions, as well as candid presentations from The Modal Shop team on the how's and why's of new products and technology. Let us know what you think and we'll be glad to add more content that meets your needs...

Join Our Mailing List!

Like us on Facebook

Follow us on twitter

View our profile on LinkedIn

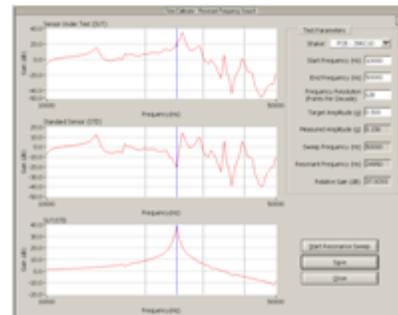
Tip of the Month

Surface Preparation

To ensure accurate transduction in high frequency measurements, it is important to take care when preparing the accelerometer mounting surface. Specifications for the best high frequency mounts include: Surface flatness of 0.0003 inch TIR, Surface Roughness of 32 micro inch, Perpendicularity of mounting hole of 1 degree +/- 0.5 degree and a Tap Class of 2. A very thin coating of silicone lubricant also fills voids enhancing mounting interface stiffness and

Q&A on Calibration and Resonance Search

Question: I see that the frequency response of the reference standard accelerometer is calibrated up to a 20kHz upper limit frequency. So how does the resonance search function (up to 50 kHz) for the calibration system "calibrate" the sensitivity at frequencies higher than 20kHz?...



[Click here to read more](#)

<http://www.modalshop.com/calibration.asp?ID=405>

State-of-the-Union of Sensor TEDS



Mr. Marco Peres, Structural Test Product Manager, answers some of the common questions about TEDS, templates and versions, as well as giving a glimpse of where things are headed. This article

provides the Question and Answer transcription of a recent interview with him and can also be viewed as a video if you prefer.

[Click here to read more](#)

<http://www.modalshop.com/calibration.asp?ID=393>

transmissibility for the best high frequency response.

Quick Links

[NCSL](#)

[IMEKO](#)

[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

[SAVIAC](#)

[Vibration Institute](#)

Previous Newsletter

[sensor & cal tips #41](#) -

Sensing Calibration News; Can I create my own DVM?

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

[The Modal Shop website](#)

[PCB Piezotronics website](#)

[IMI website](#)

[Larson Davis website](#)

[PCB Load & Torque website](#)

Blast from the Past...

For those who may be new to our newsletter, we wanted to highlight an article from a previous *sensor & calibration tips* - [Decoding the specification sheet...](#)

Remember the famous line from Romeo & Juliet, "What's in a name? That which we call a rose by any other name would smell as sweet..." How about when it comes to accelerometers... is it

the same? Is a rose still a rose still a rose? Well... as you might imagine... there is a great deal of variance.

[A survey on specification sheets](#) for a similar accelerometer from 5 different sensor manufacturers indicates a disparity of what vendors consider as "standard" specifications. 5 out of 5 Manufacturers listed...

ACCELEROMETER, ICP [®] , TRIAXIAL		Optional Versions (Options for standard model except *)
ENGLISH	SI	A - Adhesive Mount Mounting Thread
1000 mV/g	102 mV/(m/s ²)	Supplied Accessory: Max adhesive mount
±5 g pk	±49 m/s ² pk	Supplied Accessory: Max adhesive mtg bases to fit
0.5 to 2000 Hz	0.5 to 2000 Hz	J - Ground Isolated
0.3 to 5000 Hz	0.3 to 5000 Hz	Electrical Isolation (EIS)
±20 kHz	±20 kHz	
2 to 2000 Hz	2 to 2000 Hz	
0.00005 g rms	0.0005 m/s ² rms	[1]
±1 %	±1 %	[2]
±5 %	±5 %	
±5000 g pk	±5000 g pk	
-20 to +170 °F	-29 to +77 °C	T - TEDS Capable of Digit
See Graph	See Graph	IEEE P1491.4
0.0007 g/yr	0.007 (m/s ²)/yr	[1]

[Click here to read more](#)

<http://www.modalshop.com/calibration.asp?ID=273>

"The only constant in the world is change..." - Heraclitus (of Ephesus) (c. 535-BC - 475 CB)

So we better embrace it! Here at The Modal Shop we are working hard to meet your needs and delivering those products, services and interactions with our signature smile of "Total Customer Satisfaction." We've been working hard on some exciting new technologies. Look for a number of new Modal Shop sensing, excitation and calibration products over the next few months...and while we are filling your needs that we can see, please remember, we always invite you to contact us with those we don't. We've created a dynamic hub of the top talent in business, research and academia to help with your toughest measurement challenges. We are here to serve you!

Sincerely,



Michael J. Lally
The Modal Shop
A PCB Group Company
mike.lally@modalshop.com

