



THE AMERICAN ASSOCIATION FOR  
LABORATORY ACCREDITATION

ACCREDITED LABORATORY

A2LA has accredited

**PCB PIEZOTRONICS OF NORTH CAROLINA, INC.**  
**Halifax, NC**

for technical competence in the field of

### Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General Requirements for the Competence of Testing and Calibration Laboratories*. This laboratory also meets the requirements of ANSI/NCSL Z540-1-1994 and any additional program requirements in the field of calibration. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 18 June 2005).



Presented this 24<sup>th</sup> day of March 2008.

A handwritten signature in cursive script, appearing to read "Peter Abney".

President  
For the Accreditation Council  
Certificate Number 1862.02  
Valid to February 28, 2010

For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005  
& ANSI/NCSL Z540-1-1994

PCB PIEZOTRONICS OF NORTH CAROLINA, INC.  
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## CALIBRATION

Valid To: February 28, 2010

Certificate Number: 1862.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations<sup>1</sup>:

### I. Electrical – DC/Low Frequency

Parameter/Equipment	Range	Best Uncertainty <sup>2,3</sup> (±)	Comments
DC Voltage – Measure	(0 to 20) mV (20 to 200) mV 200 mV to 2 V (2 to 25) V (25 to 250) V	0.020 % + 6.9 μV 0.020 % + 6.9 μV 0.020 % + 12 μV 0.028 % + 1.2 mV 0.028 % + 1.5 mV	NI4060 DAQ card
DC Current – Measure	(0 to 200) mA	0.048 % + 12 μA	NI4060 DAQ card
AC Voltage – Measure	(0 to 200) mV (200 to 500) mV 500 mV to 1 V (1 to 2) V (2 to 5) V (5 to 10) V (10 to 250) V	0.068 % + 0.040 mV 0.068 % + 0.068 mV 0.068 % + 0.11 mV 0.068 % + 0.21 mV 0.068 % + 0.51 mV 0.13 % + 1.1 mV 0.72 % + 790 mV	NI6111E DAQ card      NI4060 DAQ card



II. Mechanical

Parameter/Equipment	Range	Best Uncertainty <sup>2</sup> (±)	Comments
Dynamic Force	(0 to 10 000) lbf	1 % of full scale	Strain gauge, load cell reference
Vibration General Purpose –	(5 to 9) Hz (10 to 99) Hz (100 to 1999) Hz (2000 to 10 000) Hz (11 000 to 15 000) Hz	2 % reading (rdg) 1.5 % rdg 1 % rdg 2.5 % rdg 7 % rdg	PCB quartz acceleration reference, back to back comparison method
Portable Shaker Table	(79.6 to 159.2) Hz	1.4 % rdg	Surface mounted quartz reference
Low Frequency	(0.5 to 99) Hz (1 to 30) Hz (30.01 to 199) Hz (200 to 1000) Hz	1.8 % rdg 1 % rdg 1.5 % rdg 3 % rdg	PCB quartz acceleration reference, back to back comparison method
Impulse Force	(0 to 5000) lb (0 to 1000) Hz	3.8 % rdg	PCB quartz reference accelerometer

<sup>1</sup> This laboratory offers commercial calibration service.

<sup>2</sup> “Best Uncertainty” is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards of nearly ideal measuring equipment. Best uncertainties represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of  $k = 2$ . The best uncertainty of a specific calibration performed by the laboratory may be greater than the best uncertainty due to the behavior of the customer’s device and to influences from the circumstances of the specific calibration.

<sup>3</sup> Best measurement uncertainties are expressed as either a specific value that covers the full range or as a fraction of the reading plus a fixed floor specification.

