Are you developing a new inertial measurement system?
Precise motion stimulus is one of the key ingredients to develop and test your inertial sensor design.

Do you have sensors or systems experiencing performance anomalies?
Accelerate your research and development and support your failure analysis with the help of our precision motion test equipment.

Do you need expertise for testing inertial sensors?
Our experts provide turn-key testing solutions based on industry best practice.

Is your own test equipment tied-up in production?
Don’t disturb your production schedules – take advantage of our facility.
Our inertial Test Solution lab (iTS Lab) provides acceleration, angular rate, linear & angular vibration, temperature, voltage and the respective data acquisition.

### Customer Devices

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</table>

### Consulting and Assistance

ACUTRONIC shares its expertise in inertial testing with you. Test and data acquisition are tailored methods and procedures according to your needs. Our experts provide valuable assistance and consultation in determining your nominal/optimal requirement, from measurement, characterization and calibration, to test plan definition.

### ACUTRONIC iTS Lab

1600 sq. ft. facility (2 labs and 2 observation rooms) including:

- Controlled temperature
- Data acquisition system
- Library of test standards
- Equipment calibration traceable to National Institute of Standards and Technology (NIST)
- Several motion simulators, shakers, and temperature chambers

### Facility Rental

ACUTRONIC’s iTS Lab is available for rental on a daily or weekly basis. General consultation of our mechanical, electrical, servo, software and test engineering team is available on an hourly basis.

### Turnkey Testing

ACUTRONIC offers a full turnkey testing service. Based on agreed methods and specifications, ACUTRONIC performs the entire test program, from initial concept, through testing to final report. Customer witness testing via webcam is also available. At the opposite end of the scale, the customer may design the entire test and even control the test remotely via a secure internet connection.

### Common Inertial Sensor Test Parameters

- **Bias:** Noise floor, G-sensitivity, temperature influence, in-run, power-up
- **Axis Alignment:** misalignment, compliance, cross-axis sensitivity, temperature
- **Scale Factor:** Asymmetry, cross-axis sensitivity, G-sensitivity, repeatability, temperature influence
- **Angular Random Walk:** Vibration sensitivity, temperature influence

Additional/customized testing is available upon request.

### ACUTRONIC Test Standards

Testing is performed according to IEEE standards. Based on these standards, we derive the ideal method for your specific needs. Automotive standard tests are also available.

### Data Security

A dedicated secure customer entrance allows 24/7 access to the facility, while access to the Lab is restricted to customers and designated ACUTRONIC employees only for customer assistance. A separate customer network restricts access to your valuable data and equipment. ACUTRONIC data storage and security procedures ensure that customers have full control and maintain confidentiality of all data. The iTS Lab supports removable hard drives and data encryption.
Since its inception in 2010, the iTS Lab has proudly hosted a variety of companies and their sensors, ranging from a one-man startup operation to world-wide companies who are leaders in their respective fields. The sensor applications that they cover are just as wide, including:

- Military applications e.g. virtual reality training
- Aviation applications e.g. airborne camera stabilization
- Industrial applications e.g. surveying, constructions, agriculture
- Transportation applications e.g. automatic train control & protection
- Consumer applications e.g. handheld devices

**Customer Benefits**

- Build and staff your own test facility with minimal capital investment
- Reduce the number of design/test cycles through accurate and comprehensive data from each iteration
- Experience faster time-to-market and lower development costs
- Focus your resources on design and development of your device
- Benefit from ACUTRONIC’s experience and inertial measurement expertise
- Receive data analysis and interpretation

**Basic Standards from the IEEE**

- IEEE Std 529-1980 Strapdown Rate-Integrating Gyros
- IEEE Std 647-2006 Single-Axis Laser Gyros
- IEEE Std 813-1988 Two-DOF Dynamically Tuned Gyros
- IEEE Std 1431-2004 Coriolis Vibratory Gyros
- IEEE Std 1554-2005 Inertial Sensor Test Equipment, Instrumentation, Data Acquisition and Analysis

**MEMS Standard Tests**

ACUTRONIC is a member of the MIG steering committee which, along with NIST, establishes MEMS standard tests.

Please contact us for more detailed information or to discuss your inertial testing needs.