ACUTRONIC USA Designs/Maintains a Three-Axis HWIL Motion Simulator

Paul Hollinger, ACUTRONIC USA

ACUTRONIC USA has manufactured a Three-Axis Missile Motion Simulator (TAMMS) which maintains payload orientations with a maximum composite error of 50 micro radians.

ACUTRONIC USA, Inc. has designed, manufactured, and is currently testing a Model AC371-1 Three-Axis Motion Simulator designed to test and evaluate missile systems and their components for Lockheed Martin. This “turn-key” Three-Axis Motion Simulator includes a three-axis simulator, drive power amplifier consoles, simulator control console containing an ACUTROL 3000 motion controller, and a SCRAMNet high speed reflective memory remote interface along with system instal-

Continued on page 02
The Three-Axis Motion Simulator is designed to produce and maintain Payload Orientations with a maximum composite error of 50 micro radians (10.3 arc seconds).

- Controlled by the truly digital ACUTROL 3000 servo system with SCRAMNet shared memory interface for real time Hardware-in-the-loop (HWIL) simulations.
- AC brushless servomotors drive all three axes with the Pitch axis peak torque being greater than 55,000 ft-lbs (74,580 N-M).

For further information please contact:

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**Model AC371-1**  
Three-Axis Missile Motion Simulator

<table>
<thead>
<tr>
<th>Performance Specifications</th>
<th>Roll</th>
<th>Yaw</th>
<th>Pitch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Displacement, deg</td>
<td>Continuous</td>
<td>± 50</td>
<td>± 45</td>
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<tr>
<td>Position accuracy, 0 to peak, arc-sec</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Rate, maximum, deg/sec</td>
<td>1,440</td>
<td>400</td>
<td>400</td>
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<tr>
<td>Acceleration, deg/sec²</td>
<td>15,000</td>
<td>6,000</td>
<td>6,000</td>
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<tr>
<td>Frequency Response, Hz (with 100 lb. payload)</td>
<td>35</td>
<td>35</td>
<td>35</td>
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