Vibration Service Checklist

Revision: 10/14/2008

Please initial and return the line items to Professional Testing Inc. before your test date!!

<table>
<thead>
<tr>
<th>Subject</th>
<th>Item #</th>
<th>Question</th>
<th>Initials</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Set-up</td>
<td>1a</td>
<td>Can product(s) fit on the vibration table?</td>
<td></td>
<td>Mandatory</td>
</tr>
<tr>
<td></td>
<td>1b</td>
<td>Has the appropriate test fixture been procured?</td>
<td></td>
<td>Mandatory</td>
</tr>
<tr>
<td></td>
<td>1c</td>
<td>Have the locations of any accelerometers been identified?</td>
<td></td>
<td>Preferred</td>
</tr>
<tr>
<td></td>
<td>1e</td>
<td>Do you have more than 1 test sample?</td>
<td></td>
<td>Preferred</td>
</tr>
<tr>
<td>Support Equipment</td>
<td>2a</td>
<td>Will you supply equipment to operate/monitor functionality of the test article?</td>
<td></td>
<td>Mandatory</td>
</tr>
<tr>
<td></td>
<td>2b</td>
<td>Are the I/O and power cables long enough (&gt; 6 feet)?</td>
<td></td>
<td>Mandatory</td>
</tr>
<tr>
<td></td>
<td>2c</td>
<td>Will you provide a PC with software if required to validate DUT functionality?</td>
<td></td>
<td>Mandatory</td>
</tr>
<tr>
<td></td>
<td>2d</td>
<td>Will you bring the appropriate power supply or battery?</td>
<td></td>
<td>Mandatory</td>
</tr>
</tbody>
</table>
Checksheet – Elaboration

1a - Can product(s) fit on the vibration table?

The vibration table has 3 configurations: The table can be mounted vertically with a 2’x2’ table on top, it can be mounted vertically with a cube that has 2’x2’ faces on 5 sides, or it can be mounted horizontally and attached to a 2’x5’ slip table. There is some clearance for overhang / cantilever on the vertical mount, and some room for extra length on the horizontal. If your test unit is going to have any overhand

1b - Has the appropriate test fixture been procured?

The test fixture should be made of a lightweight material (i.e. aluminium) and be ideally ≤ 10% of the weight of the DUT. The fixture should be able to attach to the following bolt hole patterns, depending on whether you’re using the shaker in the vertically mounted “normal” position, the slip table, the vertically table, or the “cube”

Vertically Mounted “Normal” Position:
Slip table:
"The Cube"

TOP View

Side A

Side B
1c – Have the locations of accelerometers been identified?

5 thermocouples should be place at the location of highest thermal mass, and 3 accelerometers will be placed on the most rigid areas of the DUT: one accelerometer will be mounted in each axis.

1d - Have you notified PTI of any deviations from the standard HALT procedure?

Reference the “HALT Overview” document that details the 4 steps of HALT: hot thermal step, cold thermal step, vibration step, and combined stress. This procedure is not commonly altered, but we’re happy to provide this for you: **“Make sure your quote from PTI clearly references these deviations”**

1e – Do you have more than 1 test sample?

This is not required, but could help speed up the testing

2a - Will you supply equipment to operate/monitor functionality of the test article?

The test technician has to know if the device is operating normally without stopping the vibration test. There is an area to set up support equipment next to the table. This table supports any ancillary functional test equipment, like a PC for example.

2b - Are the I/O and power cables long enough ( > 6 feet)?

6 feet is enough to run the cables off the vibration table and into the nearby setup area.

2c - Will you provide a PC with software if required to validate DUT functionality?

Professional Testing can provide power and an internet connection, but cannot provide the PC as the operation of the PC and proper installation of the software could influence the results of the test

2d - Will you bring the appropriate power supply or battery?

PTI can provide 60Hz / 120VAC power, but if any other power is required for your device, please make arrangements for the proper power supply. If the device is battery powered, the battery must last at least 4 hours on a single charge.