AUGUST 31, 2009
TEST REPORT #208125

SSBP-20 AND SSBP-16
MICROWAVE COAXIAL ASSEMBLIES
TESTED FOR USE IN STANDARD MULTI-CONTACT
MIL-DTL-38999 CONNECTORS

PART NUMBERS

COAXIAL ASSEMBLIES
SIZE 20 SSBP
SSBP-20P (50000-001P)
SSBP-20S (51000-001S)

SIZE 16 SSBP
SSBP-16P (50200-001P)
SSBP-16S (51200-001S)

SOUTHWEST MICROWAVE, INC.

APPROVED BY: JOSEPH R. DUCHARME
PROJECT ENGINEERING MANAGER
CONTECH RESEARCH, INC.
ATTLEBORO, MA
### REVISION HISTORY

<table>
<thead>
<tr>
<th>DATE</th>
<th>REV. NO.</th>
<th>DESCRIPTION</th>
<th>ENG.</th>
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<tr>
<td>8/31/2009</td>
<td>1.0</td>
<td>Initial Issue.</td>
<td>JRD</td>
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<tr>
<td>10/6/2009</td>
<td>1.1</td>
<td>Clarifying input from test sponsor related to the sample description figure #2 added.</td>
<td>JRD</td>
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</table>
CERTIFICATION

This is to certify that the evaluation described herein was designed and executed by personnel of Contech Research, Inc. It was performed with the concurrence of Southwest Microwave, of Tempe, Arizona who was the test sponsor.

All equipment and measuring instruments used during testing were calibrated and traceable to NIST according to ISO 10012-1 and ANSI/NCSL Z540-1 and MIL-STD-45662 as applicable.

All data, raw and summarized, analysis and conclusions presented herein are the property of the test sponsor. No copy of this report, except in full, shall be forwarded to any agency, customer, etc., without the written approval of the test sponsor and Contech Research.

Approved By: Joseph R. Ducharme
Project Engineering Manager
Contech Research, Inc.
Attleboro, MA

JD:ld
SCOPE

To determine performance characterization of SSBP Coaxial Assemblies, Sizes 20 and 16 (as manufactured and submitted by the test sponsor Southwest Microwave) to meet vibration and shock performance levels of MIL-DTL-38999 "host" connectors.

APPLICABLE DOCUMENTS

1. Unless otherwise specified, the following documents of issue in effect at the time of testing performed form a part of this report to the extent as specified herein. The requirements of sub-tier specifications and/or standards apply only when specifically referenced in this report.


3. Standards: EIA Publication 364

TEST SAMPLES AND PREPARATION

1. The following test samples were submitted by the test sponsor, Southwest Microwave, for the evaluation to be performed by Contech Research, Inc.

   COAXIAL ASSEMBLIES, Description and Model Number
   SIZE 20 SSBP
   SSBP-20P (50000-001P) with 36 in. .047 flex. coax cable to SMA plug.
   SSBP-20S (51000-001S) with 36 in. .047 flex. coax cable to SMA plug.

   SIZE 16 SSBP
   SSBP-16P (50200-001P) with 36 in. .086 flex. coax cable to SMA plug.
   SSBP-16S (51200-001S) with 36 in. .086 flex. coax cable to SMA plug.

   Host Connectors (Generic MIL-reference) Quantity
   D38999/26FD5SN mating to D38999/20FD5PN 3
   D38999/26FA98SN mating to D38999/20FA98PN 4

   Connector Cavity Content
<table>
<thead>
<tr>
<th>Arrangement</th>
<th>Contents</th>
<th>(Qty. per Connector)</th>
</tr>
</thead>
<tbody>
<tr>
<td>D5</td>
<td>SSBP-16</td>
<td>(5 per connector)</td>
</tr>
<tr>
<td>A98</td>
<td>SSBP-20</td>
<td>(3 per connector)</td>
</tr>
</tbody>
</table>
TEST SAMPLES AND PREPARATION continued

2. The SSBP coaxial contact assemblies were supplied by the test sponsor already terminated to cable per above with field-replaceable SMA cable plugs attached. The SSBP assemblies were installed in D38999 connectors as supplied by test sponsor.

3. All test samples were coded and identified by Contech Research to maintain continuity throughout the test sequences. Upon initiating testing, mated test samples remained with each other throughout the test sequences for which they were designated. All tests involve mated connectors with full compliment of SSBP coaxes loaded into appropriate sized contact cavities.

4. Connectors used were purchased using QPL sourcing and MIL-numbering. There were used for testing in "as is" condition as supplied by QPL manufacturer.

5. All equipment and measuring instruments used during testing were calibrated and traceable to NIST according to ISO 10012-1 and ANSI/NCSL Z540-1, as applicable.

TEST SELECTION

1. All tests were performed in accordance with the applicable sequences and procedures as specified in MIL-DTL-38999K. The interchangeability (dimensional inspection) was "accepted" without study based upon manufacturers' QPL listing and further analysis was not performed by test sponsor or Contech Research.

2. The following test groups were established, see Test Plan Flow Diagram, Figure #1.

3. Test set ups and/or procedures which are standard or common are not detailed or documented herein provided they are certified as being performed in accordance with the applicable (industry or military) test methods, standards and/or drawings as specified in the detail specification.

SAMPLE CODING

All samples were coded. Mated test samples remained with each other throughout the test group/sequences for which they were designated. Coding was performed in a manner which remained legible for the test duration.
Connectors used were from more than one manufacturer. The use of multi-sourced connectors, identified by MIL-number from current QPL, provided product descriptions independent of the manufacturer. The standardization of connector (and contact cavities) design and dimensioning permits "SSBP" to be interchangeable, for this testing, with non-coax (i.e., standard) signal contacts as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>MIL Contact Number</th>
<th>SSBP Coax Descr.(number)</th>
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</thead>
<tbody>
<tr>
<td>Size 20, Pin</td>
<td>M39029/58-363</td>
<td>SSBP-20P (50000-001P)</td>
</tr>
<tr>
<td>Size 20, Skt</td>
<td>M39029/56-351</td>
<td>SSBP-20S (51000-001S)</td>
</tr>
<tr>
<td>Size 16, Pin</td>
<td>M39029/58-364</td>
<td>SSBP-16P (50200-001P)</td>
</tr>
<tr>
<td>Size 16, Skt</td>
<td>M39029/56-352</td>
<td>SSBP-16S (51200-001S)</td>
</tr>
</tbody>
</table>

The use of MIL part numbers does not imply application preference for any connector or manufacturer, MIL or COTS-equivalent provided that standardized dimensions for contact cavities and insert alignment are maintained. This testing is on the SSBP coax assemblies and any differences between host connectors was ignored.
FIGURE #1

Test Plan Flow Diagram

VIBRATION (60 g’s)  VSWR @ START  VSWR @ 6 HOURS  VSWR @ FINAL  MECHANICAL SHOCK

VIBRATION (43 g’s)  VSWR @ START  VSWR @ 4 HOURS  VSWR @ START  MECHANICAL SHOCK

VIBRATION (50 g’s)  VSWR @ START  VSWR @ 4 HOURS  VSWR @ START  MECHANICAL SHOCK
VOLTAGE STANDING WAVE RATIO (VSWR)

1. Testing focuses on coaxial assemblies, results of VSWR measurements are deemed critical to confirm performance.

2. VSWR measurements were taken multiple times during the testing. Signal continuity was maintained at 6 GHz during vibration.

3. All VSWR measurements were at 6 GHz. Test configuration is in accordance with Figure 2.

Figure 2.
Schematic of Single-Line SSBP-to-SSBP within mated D38999 "host" connectors. VSWR measurements include RP to RP (SMA/plugs, cables, and SSBP P/S pair).
## DATA SUMMARY

<table>
<thead>
<tr>
<th>TEST</th>
<th>REQUIREMENTS</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VIBRATION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SINE</td>
<td>NO DAMAGE</td>
<td>PASSED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VSWR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MAXIMUM_MINIMUM</td>
</tr>
<tr>
<td>*D38999/26FD5SN</td>
<td>Initial</td>
<td>1.074_1.054</td>
</tr>
<tr>
<td></td>
<td>Completion</td>
<td>1.147_1.024</td>
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<tr>
<td>*D38999/26FA98SN</td>
<td>Initial</td>
<td>1.103_1.035</td>
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<td>Completion</td>
<td>1.075_1.064</td>
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<tr>
<td><strong>RANDOM (43 g’s)</strong></td>
<td>NO DAMAGE</td>
<td>PASSED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VSWR</td>
</tr>
<tr>
<td></td>
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<td>MAXIMUM_MINIMUM</td>
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<tr>
<td>*D38999/26FD5SN</td>
<td>Initial</td>
<td>1.217_1.054</td>
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<tr>
<td></td>
<td>Completion</td>
<td>1.074_1.057</td>
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<td>Completion</td>
<td>1.150_1.065</td>
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<tr>
<td><strong>RANDOM (50 g’s)</strong></td>
<td>NO DAMAGE</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>VSWR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MAXIMUM_MINIMUM</td>
</tr>
<tr>
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<td>1.203_1.028</td>
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<td>1.063_1.011</td>
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<tr>
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<td></td>
<td>Completion</td>
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<tr>
<td><strong>MECHANICAL SHOCK</strong></td>
<td>NO DISCONTINUITY &gt;1.0</td>
<td>PASSED</td>
</tr>
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</table>

* Host connector with corresponding mate.
<table>
<thead>
<tr>
<th>ID#</th>
<th>Next Cal</th>
<th>Last Cal</th>
<th>Equipment Name</th>
<th>Manufacturer</th>
<th>Model #</th>
<th>Serial #</th>
<th>Accuracy</th>
<th>Freq. Cal</th>
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<td>7/13/2010</td>
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<td>Accelerometer</td>
<td>PCB Piezotronics</td>
<td>302A</td>
<td>7040</td>
<td>See Cal Cert</td>
<td>12 mon</td>
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<td>1168</td>
<td></td>
<td></td>
<td>Mainframe</td>
<td>Hewlett Packard</td>
<td>E8408A</td>
<td>US39000357</td>
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<td>1174</td>
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<td>Drill Press Stand</td>
<td>Sears</td>
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<td>SA15</td>
<td>3483</td>
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<td>Unholtz Dickie</td>
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<td>1348</td>
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<td>Low&amp;High Temp Oven</td>
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<td>108T-11</td>
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<td>Computer</td>
<td>Systemax</td>
<td>Venture</td>
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<td>N/A</td>
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</table>
TEST RESULTS
VIBRATION, SINUSOIDAL (AT TEMPERATURE)

PROCEDURE:

1. The test was performed in accordance with Paragraph 4.5.23.2.1 of Specification MIL-DTL-38999L with the following conditions.

2. Test Conditions:
   a) Amplitude: 60.0 G’s
   b) Frequency: 10Hz to 2000Hz
   c) Duration per axis: 12 hours / axis (3 axis)
   d) Duration at +175ºC ±5ºC: 4 hours
   e) Duration at -55ºC ±5ºC: 4 hours
   f) Duration at Ambient Temp: 4 hours
   g) Duration (total): 36 hours
   h) Test Current: 100 milliamps

3. The test samples for sine vibration were not fixture as indicated in paragraph 4.5.23, accessory load was not attached as required in Figure #24 during vibration.

4. All positions were terminated into a series circuit for discontinuity monitoring.

5. The following samples were tested to the above conditions:

   Part numbers
   D38999/26FD-5SN & /20FD-5PN with SSBP-16
   D38999/26FA-98SN & /20FA-98PN with SSBP-20

--continued on next page.
PROCEDURE:—continued

6. Prior to performing variable measurements, the test samples were allowed to recover to room ambient conditions.

7. VSWR was measured at scheduled points during vibration.

-----------------------------------------------

REQUIREMENTS:

1. There shall be no evidence of physical damage to the SSBP coaxes or connector samples as tested.

2. There shall be no contact interruption greater than 1.0 microsecond.

3. There shall be no evidence of axial movement of the SSBP coaxes or connector samples relative to each other.

-----------------------------------------------

RESULTS:

1. The test samples as tested met the requirements as specified.

2. There was no physical damage to the test samples as tested.

3. There was no interruption greater than 1.0 microsecond.

4. The sinusoidal vibration profiles are illustrated in the Figures #3, #4 and #5.

5. The sinusoidal vibration photos are illustrated in the Figures #6, #7 and #8.
FIGURE #3

Channel 1

Project# 208125
Run 60G
Z-Axis
Test Conditions:
10-2000-10Hz
ID#:9P10R,1P2R
Tech:MOB
Date:07/09/09
FIGURE #4

Project # 208125
Run 60G Sine
X-Axis
Test Conditions:
10 to 2000 to 10 Hz
60G
ID#: 9P10R, 1P2R
Tech: MOB
Date: 07/13/09

Channel 1

Sine

[g]

100

10

1

10

100

1000

2000

[Hz]

[Hz]
FIGURE #5

Channel 1

Project# 208125
Run60G
Y-Axis
Test Conditions:
10-2000-10Hz, 60G
ID#: 9P10R, 1P2R
Tech: MOB
Date: 07/15/09
VOLTAGE STANDING WAVE RATIO (VSWR)

PROCEDURE:

1. The test was performed in accordance with Specification EIA-364, Test procedure 108. Basic interconnect schematic is shown in Figure 2 (page 8).

2. The test equipment including cables and adapters was calibrated using precision 0 and 50 ohm loads and high frequency test leads.

3. The test samples under test were terminated using SMA terminations which connected to test system and the characteristic VSWR was measured.

4. The VSWR was plotted over the range of frequencies listed with discreet points measured as noted below.

5. Test Conditions:
   a) Frequency Range : 3.0 MHz thru 6.0 GHz
   b) Termination Impedance : 50 Ω
   c) No. of Positions Tested : 3 positions

REQUIREMENTS:

The VSWR shall be measured and recorded.

RESULTS: See Next Page.
RESULTS:

The following is a summary of the data observed:

VSWR (Sine, 60 g’s):

FREQUENCY 6GHz
(Milliohms)

For SSBP in Connector Part Number (ID#) Avg. Max. Min. Dev.

<table>
<thead>
<tr>
<th>D38999/2<em>FA-98</em>N (Reference Hosts)</th>
<th>Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1P2R (initial)</td>
<td>1.061 1.074 1.054 0.011</td>
</tr>
<tr>
<td>1P2R (Z-axis1)</td>
<td>1.031 1.041 1.024 0.009</td>
</tr>
<tr>
<td>1P2R (Z-axis2)</td>
<td>1.034 1.037 1.031 0.003</td>
</tr>
<tr>
<td>1P2R (X-axis1)</td>
<td>1.029 1.035 1.026 0.005</td>
</tr>
<tr>
<td>1P2R (X-axis2)</td>
<td>1.030 1.036 1.024 0.006</td>
</tr>
<tr>
<td>1P2R (Y-axis1)</td>
<td>1.031 1.036 1.025 0.005</td>
</tr>
<tr>
<td>1P2R (Y-axis2)</td>
<td>1.072 1.147 1.024 0.066</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D38999/2<em>FD-5</em>N (Reference Hosts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9P10R (initial)</td>
</tr>
<tr>
<td>9P10R (Z-axis1)</td>
</tr>
<tr>
<td>9P10R (Z-axis2)</td>
</tr>
<tr>
<td>9P10R (X-axis1)</td>
</tr>
<tr>
<td>9P10R (X-axis2)</td>
</tr>
<tr>
<td>9P10R (Y-axis1)</td>
</tr>
<tr>
<td>9P10R (Y-axis2)</td>
</tr>
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</table>
VIBRATION, RANDOM (AT TEMPERATURE)

PROCEDURE:

1. The test was performed in accordance with Paragraph 4.5.23.2.2 of Specification MIL-DTL-38999K and MIL-STD-1344, Test Condition VI, Table 3, Letter J, with the following conditions:

2. Test Conditions:
   a) Power Spectral Density : 1.0 g²/Hz.
   b) G ‘RMS’ : 43
   c) Frequency : 50 Hz to 2000 Hz
   d) Temperature : 175°C ±5°C
   e) Duration at high temp : 16 hours
   f) Duration : 8 hours/longitudinal, 8 hours/perpendicular
   g) Test Current : 100 milliamps

3. The test samples for random vibration were not fixtured as indicated in paragraph 4.5.22, accessory load was not attached as required in Figure #24 of MIL-DTL-38999L during vibration.

4. All positions were terminated into a series circuit for discontinuity monitoring during test.

5. The following samples were tested to the above conditions:

   Part numbers
   D38999/26FD-5SN & /20FD-5PN with SSBP-16S/P
   D38999/26FA-98SN & /20FA-98PN with SSBP-20S/P

   Host connectors had SSBP pin/socket coaxes installed in all contact cavities.

REQUIREMENTS: See Next Page.
REQUIREMENTS:

1. There shall be no evidence of physical damage to the SSBP coax and connector test samples as tested.

2. There shall be no SSBP-mated interruption greater than 1.0 microsecond.

3. There shall be no evidence of axial movement of the SSBP coax and connector test samples relative to each other.

------------------------------------------------------------

RESULTS:

1. The test samples as tested met the requirements as specified.

2. There was no physical damage to the test samples as tested.

3. There was no interruption greater than 1.0 microsecond.

4. The random vibration profiles are illustrated in Figures #9 and #10.

5. The random vibration photos are illustrated in Figures #11 and #12.
FIGURE #9
Control channel

Project# 208125
Run 43.9G
Longitudinal-Axis
Test Conditions:
50Hz to 2000Hz
43.9G Random
ID#:11P12R, 3P4R
Tech: MOB
Date:07/17/09
FIGURE #10

Project# 208125  
Run 43.9G  
Perpendicular -Axis  
Test Conditions:  
43.9G Random  
50Hz to 2000Hz  
ID#:11p12R,3P4R  
Tech:MOB  
Date:07/20/09
VOLTAGE STANDING WAVE RATIO (VSWR)

PROCEDURE:

1. The test was performed in accordance with Specification EIA-364, Test procedure 108. (See Figure 2, page 8.)

2. The test equipment including cables and adapters was calibrated using precision 0 and 50 ohm loads and high frequency test leads.

3. The test samples under test were terminated using SMA terminations which connected to test system and the characteristic VSWR was measured.

4. The VSWR was plotted over the range of frequencies listed with discreet points measured as noted below.

5. Test Conditions:
   a) Frequency Range : 3.0 MHz thru 6.0 GHz
   b) Termination Impedance : 50 Ω
   c) No. of Positions Tested : 3 positions

REQUIREMENTS:

The VSWR shall be measured and recorded.

RESULTS: See Next Page.
RESULTS:

The following is a summary of the data observed:

VSWR (Random, 43 g’s):

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6 GHz</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

SSBP in Connectors

<table>
<thead>
<tr>
<th>Part Number (ID#)</th>
<th>Avg.</th>
<th>Max.</th>
<th>Min.</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>D38999/2<em>FA-98</em>N (Reference Hosts)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3P4R (initial)</td>
<td>1.111</td>
<td>1.217</td>
<td>1.054</td>
<td>0.092</td>
</tr>
<tr>
<td>3P4R (longitudinal1)</td>
<td>1.048</td>
<td>1.052</td>
<td>1.042</td>
<td>0.005</td>
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<tr>
<td>3P4R (longitudinal2)</td>
<td>1.057</td>
<td>1.066</td>
<td>1.044</td>
<td>0.012</td>
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<tr>
<td>3P4R (perpendicular1)</td>
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<td>1.056</td>
<td>1.048</td>
<td>0.004</td>
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<tr>
<td>3P4R (perpendicular2)</td>
<td>1.064</td>
<td>1.074</td>
<td>1.057</td>
<td>0.009</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number (ID#)</th>
<th>Avg.</th>
<th>Max.</th>
<th>Min.</th>
<th>Std. Dev.</th>
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<td></td>
<td></td>
</tr>
<tr>
<td>11P12R (initial)</td>
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<td>1.071</td>
<td>1.057</td>
<td>0.007</td>
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<td>0.011</td>
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<td>1.150</td>
<td>1.065</td>
<td>0.045</td>
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</table>
VIBRATION, RANDOM

PROCEDURE:

1. The test was performed in accordance with Paragraph 4.5.22.2.4 of Specification MIL-DTL-38999L and EIA 364, Test Procedure 28D, Test Condition V (ZONE 2) Figure 25.

2. Test Conditions:
   a) Power Spectral Density : 1.0 $g^2/Hz$
   b) $G$ 'RMS' : 50.0
   c) Frequency : 50 Hz to 2000 Hz
   d) Temperature : Ambient
   e) Duration, total : 16 hours
   f) Duration : 8 hours/longitudinal
      : 8 hours/perpendicular
   g) Test Current : 100 milliamps

3. The test samples for random vibration were fixtured as indicated in paragraph 4.5.22 of MIL-DTL-38999K.

4. All positions were terminated into a series circuit for discontinuity monitoring during test.

5. The following samples were tested to the above conditions:
   Part Numbers
   D38999/26FD-5SN & /20FD-5PN with SSBP-16S/P
   D38999/26FA-98SN & /20FA-98PN with SSBP-20S/P

REQUIREMENTS: See Next Page.
REQUIREMENTS:

1. There shall be no evidence of physical damage to the SSBP coax and connector test samples as tested.

2. There shall be no contact interruption greater than 1.0 microsecond.

3. There shall be no evidence of axial movement of the SSBP coax and connector test samples relative to each other.

RESULTS:

1. The test samples as tested met the requirements as specified.

2. There was no physical damage to the test samples as tested.

3. There was no interruption greater than 1.0 microsecond.

4. The random vibration profiles are illustrated in Figures #13 and #14.

5. The random vibration photos are illustrated in Figures #15 and #16.
FIGURE #14

Control channel

Project# 208125
Run:50G
Perpendicular -Axis
Test Conditions:
25Hz to 2000Hz
50G Random
ID#:13P14R,5P6R
Tech: MOB
Date:08/07/09
VOLTAGE STANDING WAVE RATIO (VSWR) VIA

PROCEDURE:

1. The test was performed in accordance with Specification EIA-364, Test procedure 108. (Refer to Figure 2, page 8.)

2. The test equipment including cables and adapters was calibrated using precision 0 and 50 ohm loads and high frequency test leads.

3. The test samples under test were terminated using SMA terminations which connected to test system and the characteristic VSWR was measured.

4. The VSWR was plotted over the range of frequencies listed with discreet points measured as noted below.

5. Test Conditions:
   a) Frequency Range : 3.0 MHz thru 6.0 GHz
   b) Termination Impedance : 50 Ω
   c) No. of Positions Tested : 3 positions

REQUIREMENTS:

The VSWR shall be measured and recorded.

RESULTS: See Next Page.
RESULTS:

The following is a summary of the data observed:

VSWR (Random, 50 g’s):

<table>
<thead>
<tr>
<th>Host connectors</th>
<th>Part Number (ID#)</th>
<th>Average (Avg.)</th>
<th>Maximum (Max.)</th>
<th>Minimum (Min.)</th>
<th>Deviation (Dev.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>D38999/2<em>FA-98</em>N</td>
<td>5P6R (initial)</td>
<td>1.043</td>
<td>1.054</td>
<td>1.028</td>
<td>0.013</td>
</tr>
<tr>
<td></td>
<td>5P6R (longitudinal1)</td>
<td>1.058</td>
<td>1.066</td>
<td>1.044</td>
<td>0.012</td>
</tr>
<tr>
<td></td>
<td>5P6R (longitudinal2)</td>
<td>1.038</td>
<td>1.063</td>
<td>1.006</td>
<td>0.029</td>
</tr>
<tr>
<td></td>
<td>5P6R (perpendicular1)</td>
<td>1.037</td>
<td>1.064</td>
<td>1.001</td>
<td>0.027</td>
</tr>
<tr>
<td></td>
<td>5P6R (perpendicular2)</td>
<td>1.037</td>
<td>1.063</td>
<td>1.011</td>
<td>0.026</td>
</tr>
<tr>
<td>D38999/2<em>FD-5</em>N</td>
<td>13P14R (initial)</td>
<td>1.145</td>
<td>1.203</td>
<td>1.044</td>
<td>0.088</td>
</tr>
<tr>
<td></td>
<td>13P14R (longitudinal1)</td>
<td>1.047</td>
<td>1.057</td>
<td>1.028</td>
<td>0.017</td>
</tr>
<tr>
<td></td>
<td>13P14R (longitudinal2)</td>
<td>1.048</td>
<td>1.060</td>
<td>1.029</td>
<td>0.016</td>
</tr>
<tr>
<td></td>
<td>13P14R (perpendicular1)</td>
<td>1.047</td>
<td>1.056</td>
<td>1.030</td>
<td>0.014</td>
</tr>
<tr>
<td></td>
<td>13P14R (perpendicular2)</td>
<td>1.047</td>
<td>1.059</td>
<td>1.028</td>
<td>0.017</td>
</tr>
</tbody>
</table>
MECHANICAL SHOCK (SPECIFIED PULSE)

PROCEDURE:

1. The test was performed in accordance with paragraph 4.5.23.1 of specification MIL-DTL-38999K and EIA 364, Test Procedure 27B with the following test conditions.

2. Test Conditions:
   a) Peak Value : 100 G
   b) Duration : 6 Milliseconds
   c) Wave Form : Half Sine
   d) Velocity : 9.7 feet Per Second
   e) No. of Shocks : 3 Shocks/Direction, 3 Axis (18 Total)

3. The test fixture was so designed as not to apply any force or stress directly to the test samples nor to prevent axial movement of the mating device.

4. The following samples were tested to the above conditions:
   Part Number
   D38999/26FD-5SN & /20FD-5PN with SSBP-16S/P
   D38999/26FA-98SN & 20/FA-98PN with SSBP-20S/P

REQUIREMENTS:

1. There shall be no evidence of axial movement of the SSBP or connector test samples relative to each other.

2. There shall be no evidence of physical damage to the SSBP or connector test samples as tested.

-continued on next page.
REQUIREMENTS:—continued

3. There shall be no contact interruption greater than 1.0 microsecond.

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RESULTS:

1. The test samples as tested met the requirements as specified.

2. There was no evidence of physical damage to the test samples as tested.

3. There was no contact interruption greater than 1.0 microsecond.

4. The Mechanical Shock characteristics are shown in Figures #17 and #18 (Calibration Pulse) and #19 (Test Pulse). Each figure displays the shock pulse contained within the upper and lower limits as defined by the appropriate test specification.
FIGURE #17

Classical Shock

Channel 1

Project 208125
Cal Wave 1
Southwest Microwave
Tech: /MOB
07/27/09
FIGURE #18

Classical Shock

Channel 1

Project 208125
Cal Wave 2
Southwest Microwave
Tech: /MOB
07/21/09