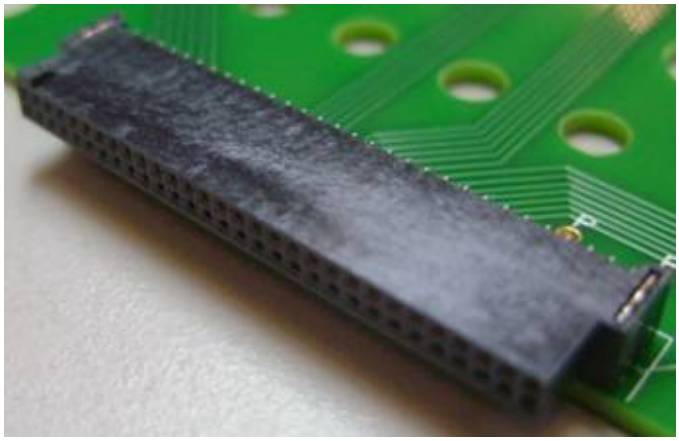
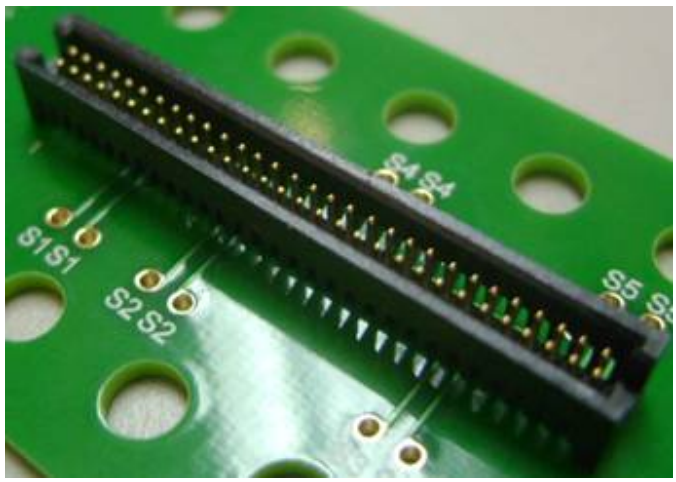
Project Number: Design Qualification Test Report	Tracking Code: 176334_Report_Rev_1		
Requested by: Leo Lee	Date: 3/7/2012	Product Rev: 0	
Part #: SFM-130-L-DH-TR\TFM-130-01-L-D-TR	Lot #: N/A	Tech: Kason He	Eng: Vico Zhao
Part description: SFM\TFM		Qty to test: 80	
Test Start: 12/27/2011	Test Completed: 1/13/2012		





DESIGN QUALIFICATION TEST REPORT

SFM\TFM
SFM-130-L-DH-TR\TFM-130-01-L-D-TR

CERTIFICATION

All instruments and measuring equipment were calibrated to National Institute for Standards and Technology (NIST) traceable standards according to IS0 10012-l and ANSI/NCSL 2540-1, as applicable.

SCOPE

To perform the following tests: Design qualification test. Please see test plan.

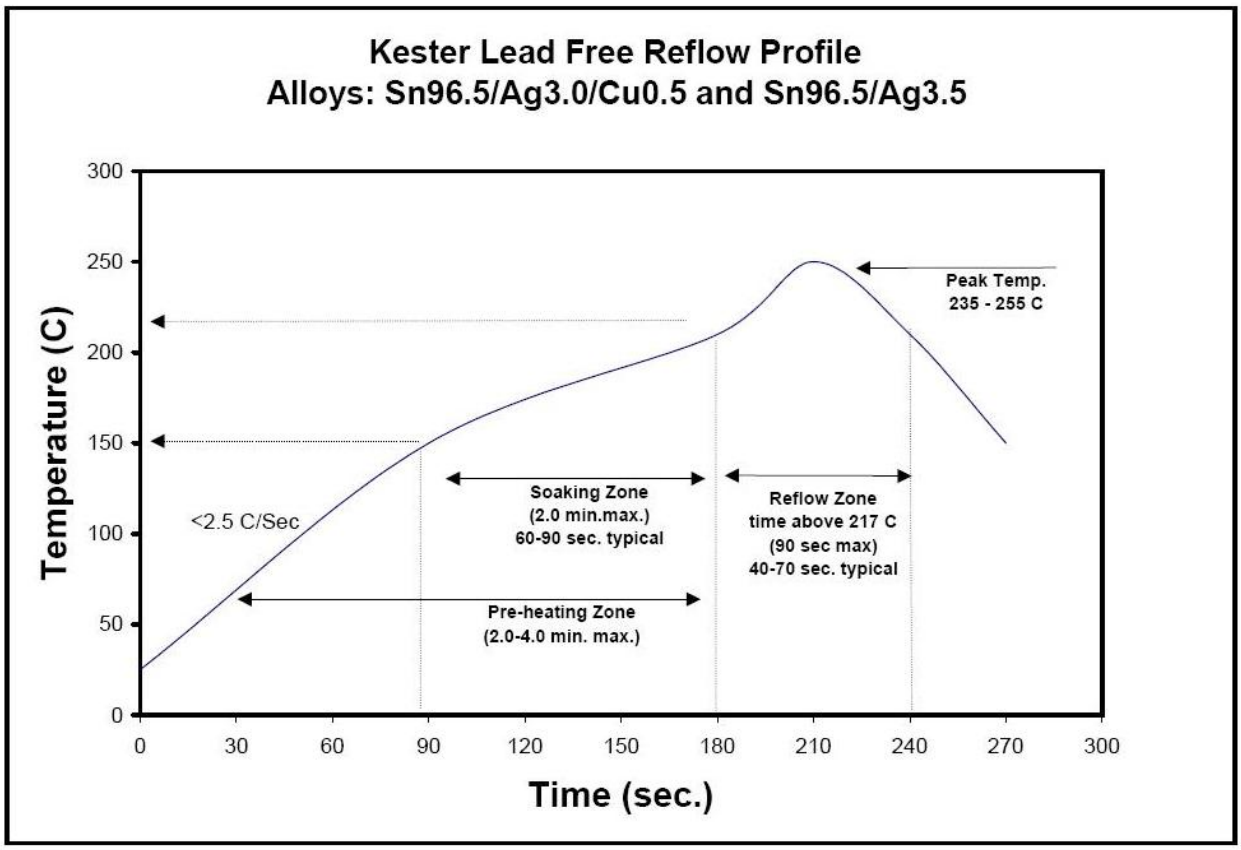
APPLICABLE DOCUMENTS

Standards: EIA Publication 364

TEST SAMPLES AND PREPARATION

1) All materials were manufactured in accordance with the applicable product specification.
2) All test samples were identified and encoded to maintain traceability throughout the test sequences.
3) After soldering, the parts to be used for LLCR and DWV/IR testing were cleaned according to TLWI-0001.
4) Either an automated cleaning procedure or an ultrasonic cleaning procedure may be used.
5) The automated procedure is used with aqueous compatible soldering materials.
6) Parts not intended for testing LLCR and DWV/IR are visually inspected and cleaned if necessary.
7) Any additional preparation will be noted in the individual test sequences.
8) Solder Information: Lead Free
9) Re-Flow Time/Temp: See accompanying profile.
10) Samtec Test PCBs used: PCB-103267-TST\PCB-103268-TST

TYPICAL OVEN PROFILE (Soldering Parts to Test Boards)



FLOWCHARTS

Gas Tight

TEST STEP	GROUP A1 192 Points
01	LLCR-1
02	Gas Tight
03	LLCR-2

Gas Tight = EIA-364-36A

LLCR = EIA-364-23, LLCR

20 mV Max, 100 mA Max

Use Keithley 580 or 3706 in 4 wire dry circuit mode

Normal Force

TEST STEP	GROUP A1 Individual Contacts (8-10 min)	GROUP A2 Individual Contacts (8-10 min)
01	Contact Gaps	Contact Gaps
02	Setup Approved	Thermal Aging (Mated and Undisturbed)
03	Normal Force (in the body and soldered on PCB unless otherwise specified)	Contact Gaps
04		Setup Approved
05		Normal Force (in the body and soldered on PCB unless otherwise specified)

Thermal Aging = EIA-364-17, Test Condition 4 (105°C)

Time Condition 'B' (250 Hours)

Normal Force = EIA-364-04

(Perpendicular) Displacement Force = 12.7 mm/min ± 6 mm/min

Spec is 50 N @ 1 mm displacement

Contact Gaps / Height - No standard method. Usually measured optically

Gaps to be taken on a minimum of 20% of each part tested

FLOWCHARTS Continued

Thermal Aging

TEST STEP	GROUP A1 8 Boards Thermal Aging (Mated)
01	Contact Gaps
02	Forces - Mating / Unmating
03	LLCR-1
04	Thermal Aging (Mated and Undisturbed)
05	LLCR-2
06	Forces - Mating / Unmating
07	Contact Gaps

Thermal Aging = EIA-364-17, Test Condition 4 (105°C)

Time Condition 'B' (250 Hours)

Mating / Unmating Forces = EIA-364-13

Contact Gaps / Height - No standard method. Usually measured optically.

Gaps to be taken on a minimum of 20% of each part tested

LLCR = EIA-364-23, LLCR

20 mV Max, 100 mA Max

Use Keithley 580 or 3706 in 4 wire dry circuit mode

FLOWCHARTS Continued

Durability/Mating/Unmating/Gaps

TEST STEP	GROUP B1 8 Boards (largest position submitted)	GROUP B2 8 Boards (middle position submitted)	GROUP B3 8 Boards (smallest position submitted)
01	Contact Gaps	Contact Gaps	Contact Gaps
02	LLCR-1	Forces - Mating / Unmating	Forces - Mating / Unmating
03	Forces - Mating / Unmating	25 Cycles	25 Cycles
04	25 Cycles	Forces - Mating / Unmating	Forces - Mating / Unmating
05	Forces - Mating / Unmating	25 Cycles (50 Total)	25 Cycles (50 Total)
06	25 Cycles (50 Total)	Forces - Mating / Unmating	Forces - Mating / Unmating
07	Forces - Mating / Unmating	25 Cycles (75 Total)	25 Cycles (75 Total)
08	25 Cycles (75 Total)	Forces - Mating / Unmating	Forces - Mating / Unmating
09	Forces - Mating / Unmating	25 Cycles (100 Total)	25 Cycles (100 Total)
10	25 Cycles (100 Total)	Forces - Mating / Unmating	Forces - Mating / Unmating
11	Forces - Mating / Unmating		
12	Clean w/Compressed Air		
13	Contact Gaps		
14	LLCR-2		
15	Thermal Shock (Mated and Undisturbed)		
16	LLCR-3		
17	Cyclic Humidity (Mated and Undisturbed)		
18	LLCR-4		
19	Forces - Mating / Unmating		

Thermal Shock = EIA-364-32, Table II, Test Condition I:

-55°C to +85°C 1/2 hour dwell, 100 cycles

Humidity = EIA-364-31, Test Condition B (240 Hours)

and Method III (+25°C to +65°C @ 90% RH to 98% RH)

ambient pre-condition and delete steps 7a and 7b

Mating / Unmating Forces = EIA-364-13

Contact Gaps / Height - No standard method. Usually measured optically.

Gaps to be taken on a minimum of 20% of each part tested

LLCR = EIA-364-23, LLCR

20 mV Max, 100 mA Max

Use Keithley 580 or 3706 in 4 wire dry circuit mode

FLOWCHARTS Continued

IR & DWV

TEST STEP	GROUP A1 2 Mated Sets Break Down Pin-to-Pin	GROUP A2 2 Unmated of Part # Being Tested Break Down Pin-to-Pin	GROUP A3 2 Unmated of Mating Part # Break Down Pin-to-Pin	GROUP B1 2 Mated Sets Pin-to-Pin
01	DWV/Break Down Voltage	DWV/Break Down Voltage	DWV/Break Down Voltage	IR & DWV at test voltage (on both mated sets and on each connector unmated)
02				Thermal Shock (Mated and Undisturbed)
03				IR & DWV at test voltage (on both mated sets and on each connector unmated)
04				Cyclic Humidity (Mated and Undisturbed)
05				IR & DWV at test voltage (on both mated sets and on each connector unmated)

TEST STEP	GROUP A1 2 Mated Sets Break Down Row-to-Row	GROUP A2 2 Unmated of Part # Being Tested Break Down Row-to-Row	GROUP A3 2 Unmated of Mating Part # Break Down Row-to-Row	GROUP B1 2 Mated Sets Row-to-Row
01	DWV/Break Down Voltage	DWV/Break Down Voltage	DWV/Break Down Voltage	IR & DWV at test voltage (on both mated sets and on each connector unmated)
02				Thermal Shock (Mated and Undisturbed)
03				IR & DWV at test voltage (on both mated sets and on each connector unmated)
04				Cyclic Humidity (Mated and Undisturbed)
05				IR & DWV at test voltage (on both mated sets and on each connector unmated)

DWV on Group B1 to be performed at Test Voltage

DWV test voltage is equal to 75% of the lowest break down voltage from Groups A1, A2 or A3

Thermal Shock = EIA-364-32, Table II, Test Condition I:

-55°C to +85°C 1/2 hour dwell, 100 cycles

Humidity = EIA-364-31, Test Condition B (240 Hours)

and Method III (+25°C to +65°C @ 90% RH to 98% RH)

ambient pre-condition and delete steps 7a and 7b

IR = EIA-364-21

DWV = EIA-364-20, Test Condition 1

FLOWCHARTS Continued

Current Carrying Capacity - Double Row

TEST STEP	GROUP B1 3 Mated Assemblies 2 Contacts Powered	GROUP B2 3 Mated Assemblies 4 Contacts Powered	GROUP B3 3 Mated Assemblies 6 Contacts Powered	GROUP B4 3 Mated Assemblies 8 Contacts Powered	GROUP B5 3 Mated Assemblies All Contacts Powered
01	CCC	CCC	CCC	CCC	CCC

(TIN PLATING) - Tabulate calculated current at RT, 65°C, 75°C and 95°C
after derating 20% and based on 105°C
(GOLD PLATING) - Tabulate calculated current at RT, 85°C, 95°C and 115°C
after derating 20% and based on 125°C
CCC, Temp rise = EIA-364-70

Mechanical Shock / Vibration / LLCR

TEST STEP	GROUP A1 192 Points
01	LLCR-1
02	Shock
03	Vibration
04	LLCR-2

Mechanical Shock = EIA 364-27 Half Sine,
100 g's, 6 milliSeconds (Condition "C") each axis
Vibration = EIA 364-28, Random Vibration
7.56 g RMS, Condition VB --- 2 hours/axis
LLCR = EIA-364-23, LLCR
20 mV Max, 100 mA Max
Use Keithley 580 or 3706 in 4 wire dry circuit mode

Shock / Vibration / nanoSecond Event Detection

TEST STEP	GROUP A1 40 Points
01	Event Detection, Shock
02	Event Detection, Vibration

Mechanical Shock = EIA 364-27 Half Sine,
100 g's, 6 milliSeconds (Condition "C") each axis
Vibration = EIA 364-28, Random Vibration
7.56 g RMS, Condition VB --- 2 hours/axis
Event detection requirement during Shock / Vibration is 50 nanoseconds minimum

ATTRIBUTE DEFINITIONS

The following is a brief, simplified description of attributes.

THERMAL SHOCK:

1) EIA-364-32, *Thermal Shock (Temperature Cycling) Test Procedure for Electrical Connectors.*
2) Test Condition 1: -55°C to +85°C
3) Test Time: ½ hour dwell at each temperature extreme
4) Number of Cycles: 100
5) All test samples are pre-conditioned at ambient.
6) All test samples are exposed to environmental stressing in the mated condition.

THERMAL:

1) EIA-364-17, *Temperature Life with or without Electrical Load Test Procedure for Electrical Connectors.*
2) Test Condition 4 at 105° C.
3) Test Time Condition B for 250 hours.
4) All test samples are pre-conditioned at ambient.
5) All test samples are exposed to environmental stressing in the mated condition.

HUMIDITY:

1) Reference document: EIA-364-31, *Humidity Test Procedure for Electrical Connectors.*
2) Test Condition B, 240 Hours.
3) Method III, +25° C to + 65° C, 90% to 98% Relative Humidity excluding sub-cycles 7a and 7b.
4) All samples are pre-conditioned at ambient.
5) All test samples are exposed to environmental stressing in the mated condition.

MECHANICAL SHOCK (Specified Pulse):

1) Reference document: EIA-364-27, *Mechanical Shock Test Procedure for Electrical Connectors*
2) Test Condition C
3) Peak Value: 100 G
4) Duration: 6 Milliseconds
5) Wave Form: Half Sine
6) Velocity: 12.3 ft/s
7) Number of Shocks: 3 Shocks / Direction, 3 Axis (18 Total)

VIBRATION:

1) Reference document: EIA-364-28, *Vibration Test Procedure for Electrical Connectors*
2) Test Condition V, Letter B
3) Power Spectral Density: 0.04 G^2 / Hz
4) G 'RMS': 7.56
5) Frequency: 50 to 2000 Hz
6) Duration: 2.0 Hours per axis (3 axis total)

NANOSECOND-EVENT DETECTION:

1) Reference document: EIA-364-87, *Nanosecond-Event Detection for Electrical Connectors*
2) Prior to test, the samples were characterized to assure the low nanosecond event being monitored will trigger the detector.
3) After characterization it was determined the test samples could be monitored for 50 nanosecond events

ATTRIBUTE DEFINITIONS Continued

The following is a brief, simplified description of attributes.

TEMPERATURE RISE (Current Carrying Capacity, CCC):

1) EIA-364-70, *Temperature Rise versus Current Test Procedure for Electrical Connectors and Sockets*.
2) When current passes through a contact, the temperature of the contact increases as a result of I^2R (resistive) heating.
3) The number of contacts being investigated plays a significant part in power dissipation and therefore temperature rise.
4) The size of the temperature probe can affect the measured temperature.
5) Copper traces on PC boards will contribute to temperature rise:
    a. Self heating (resistive)
    b. Reduction in heat sink capacity affecting the heated contacts
6) A de-rating curve, usually 20%, is calculated.
7) Calculated de-rated currents at three temperature points are reported:
    a. Ambient
    b. 80^{o} C
    c. 95^{o} C
    d. 115^{o} C
8) Typically, neighboring contacts (in close proximity to maximize heat build up) are energized.
9) The thermocouple (or temperature measuring probe) will be positioned at a location to sense the maximum temperature in the vicinity of the heat generation area.
10) A computer program, *TR 803.exe*, ensures accurate stability for data acquisition.
11) Hook-up wire cross section is larger than the cross section of any connector leads/PC board traces, jumpers, etc.
12) Hook-up wire length is longer than the minimum specified in the referencing standard.

CONTACT GAPS:

1) Gaps above the surrounding plastic surface were measured before and after stressing the contacts (e.g. thermal aging, mechanical cycling, etc.).
2) Typically, all contacts on the connector are measured.

MATING/UNMATING:

1) Reference document: EIA-364-13, *Mating and Unmating Forces Test Procedure for Electrical Connectors*.
2) The full insertion position was to within 0.003” to 0.004” of the plug bottoming out in the receptacle to prevent damage to the system under test.
3) One of the mating parts is secured to a floating X-Y table to prevent damage during cycling.

ATTRIBUTE DEFINITIONS Continued

The following is a brief, simplified description of attributes.

NORMAL FORCE (FOR CONTACTS TESTED OUTSIDE THE HOUSING):

1) Reference document: EIA-364-04, *Normal Force Test Procedure for Electrical Connectors*.
2) The contacts shall be tested in the loose state, *not* inserted in connector housing.
3) The contacts shall be prepared to allow access to the spring member at the same attitude and deflection level as would occur in actual use.
4) In the event that portions of the contact prevent insertion of the test probe and/or deflection of the spring member under evaluation, said material shall be removed leaving the appropriate contact surfaces exposed.
5) In the case of multi-tine contacts, each tine shall be tested independently on separate samples as required.
6) The connector housing shall be simulated, if required, in order to provide an accurate representation of the actual contact system performance.
7) A holding fixture shall be fashioned to allow the contact to be properly deflected.
8) Said holding fixture shall be mounted on a floating, adjustable, X-Y table on the base of the Dillon TC^2, computer controlled test stand with a deflection measurement system accuracy of 5 µm (0.0002”).
9) The probe shall be attached to a Dillon P/N 49761-0105, 5 N (1.1 Lb) load cell providing an accuracy of ± 0.2%.
10) The nominal deflection rate shall be 5 mm (0.2”)/minute.
11) Unless otherwise noted a minimum of five contacts shall be tested.
12) The force/deflection characteristic to load and unload each contact shall be repeated five times.
13) The system shall utilize the TC^2 software in order to acquire and record the test data.
14) The permanent set of each contact shall be measured within the TC^2 software.
15) The acquired data shall be graphed with the deflection data on the X-axis and the force data on the Y-axis and a print out will be stored with the Tracking Code paperwork.

ATTRIBUTE DEFINITIONS Continued

The following is a brief, simplified description of attributes.

INSULATION RESISTANCE (IR):

To determine the resistance of insulation materials to leakage of current through or on the surface of these materials when a DC potential is applied.

1) PROCEDURE:
   a. Reference document: EIA-364-21, *Insulation Resistance Test Procedure for Electrical Connectors*.
   b. Test Conditions:
      i. Between Adjacent Contacts or Signal-to-Ground
      ii. Electrification Time 2.0 minutes
      iii. Test Voltage (500 VDC) corresponds to calibration settings for measuring resistances.
2) MEASUREMENTS:
3) When the specified test voltage is applied (VDC), the insulation resistance shall not be less than 5000 megohms.

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

To determine if the sockets can operate at its rated voltage and withstand momentary over potentials due to switching, surges, and other similar phenomenon. Separate samples are used to evaluate the effect of environmental stresses so not to influence the readings from arcing that occurs during the measurement process.

1) PROCEDURE:
   a. Reference document: EIA-364-20, *Withstanding Voltage Test Procedure for Electrical Connectors*.
   b. Test Conditions:
      i. Between Adjacent Contacts or Signal-to-Ground
      ii. Barometric Test Condition 1
      iii. Rate of Application 500 V/Sec
      iv. Test Voltage (VAC) until breakdown occurs
2) MEASUREMENTS/CALCULATIONS
   a. The breakdown voltage shall be measured and recorded.
   b. The dielectric withstanding voltage shall be recorded as 75% of the minimum breakdown voltage.
   c. The working voltage shall be recorded as one-third (1/3) of the dielectric withstanding voltage (one-fourth of the breakdown voltage).

LLCR:

1) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets*.
2) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
3) The following guidelines are used to categorize the changes in LLCR as a result from stressing
   a. <= +5.0 mOhms: ---------- Stable
   b. +5.1 to +10.0 mOhms:---------- Minor
   c. +10.1 to +15.0 mOhms: ---------- Acceptable
   d. +15.1 to +50.0 mOhms: ---------- Marginal
   e. +50.1 to +2000 mOhms: ---------- Unstable
   f. >+2000 mOhms:---------- Open Failure

ATTRIBUTE DEFINITIONS Continued

The following is a brief, simplified description of attributes.

GAS TIGHT:

To provide method for evaluating the ability of the contacting surfaces in preventing penetration of harsh vapors which might lead to oxide formation that may degrade the electrical performance of the contact system.

1) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets.*
2) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
3) The following guidelines are used to categorize the changes in LLCR as a result from stressing
    a. <= +5.0 mOhms:---------- Stable
    b. +5.1 to +10.0 mOhms: ---------- Minor
    c. +10.1 to +15.0 mOhms: ---------- Acceptable
    d. +15.1 to +50.0 mOhms: ---------- Marginal
    e. +50.1 to +2000 mOhms:---------- Unstable
    f. >+2000 mOhms:---------- Open Failure
4) Procedure:
    a. Reference document: EIA-364-36, *Test Procedure for Determination of Gas-Tight Characteristics for Electrical Connectors, Sockets and/or Contact Systems.*
    b. Test Conditions:
        i. Class II--- Mated pairs of contacts assembled to their plastic housings.
        ii. Reagent grade Nitric Acid shall be used of sufficient volume to saturate the test chamber
        iii. The ratio of the volume of the test chamber to the surface area of the acid shall be 10:1.
        iv. The chamber shall be saturated with the vapor for at least 15 minutes before samples are added.
        v. Exposure time, 55 to 65 minutes.
        vi. The samples shall be no closer to the chamber walls than 1 inches and no closer to the surface of the acid than 3 inches.
        vii. The samples shall be dried after exposure for a minimum of 1 hour.
        viii. Drying temperature 50^{o} C
        ix. The final LLCR shall be conducted within 1 hour after drying.

RESULTS

Temperature Rise, CCC at a 20% de-rating

- **CCC for a 30°C Temperature Rise ----------2.6A per contact with 2 adjacent contacts powered**
- **CCC for a 30°C Temperature Rise ----------1.9A per contact with 4 adjacent contacts powered**
- **CCC for a 30°C Temperature Rise ----------1.6A per contact with 6 adjacent contacts powered**
- **CCC for a 30°C Temperature Rise ----------1.4A per contact with 8 adjacent contacts powered**
- **CCC for a 30°C Temperature Rise ----------0.8A per contact with all adjacent contacts powered**

Contact Gaps

Normal Force Group

Group A1

- **Initial**
  - **Min ---------- 0.0122 in**
  - **Max ---------- 0.0133 in**

Group A2

- **Initial**
  - **Min ---------- 0.0121 in**
  - **Max ---------- 0.0135 in**
- **Thermal**
  - **Min ---------- 0.0134 in**
  - **Max ---------- 0.0143 in**

Thermal Aging Group

- **Initial**
  - **Min ---------- 0.0118 in**
  - **Max ---------- 0.0144 in**
- **Thermal**
  - **Min ---------- 0.0127 in**
  - **Max ---------- 0.0145 in**

Mating\Unmating Durability Group

- **Initial**
  - **Min ---------- 0.0117 in**
  - **Max ---------- 0.0139 in**
- **After 100 Cycles**
  - **Min ---------- 0.0118 in**
  - **Max ---------- 0.0143 in**

RESULTS Continued

Mating – Unmating Forces

Thermal Aging Group

- **Initial**
  - **Mating**
    - **Min ----------12.17 Lbs**
    - **Max----------13.59 Lbs**
  - **Unmating**
    - **Min ---------- 8.84 Lbs**
    - **Max----------10.34 Lbs**
- **Thermal**
  - **Mating**
    - **Min ---------- 8.28 Lbs**
    - **Max----------11.67 Lbs**
  - **Unmating**
    - **Min ---------- 6.27 Lbs**
    - **Max---------- 8.07 Lbs**

RESULTS Continued

Mating – Unmating Forces

Mating\Unmating Durability Group

- **Initial**
  - **Mating**
    - **Min ---------- 9.95 Lbs**
    - **Max----------12.70 Lbs**
  - **Unmating**
    - **Min ---------- 7.62 Lbs**
    - **Max---------- 9.44 Lbs**
- **After 25 Cycles**
  - **Mating**
    - **Min ----------12.04 Lbs**
    - **Max----------14.79 Lbs**
  - **Unmating**
    - **Min ---------- 8.76 Lbs**
    - **Max----------10.67 Lbs**
- **After 50 Cycles**
  - **Mating**
    - **Min ----------12.63 Lbs**
    - **Max----------15.76 Lbs**
  - **Unmating**
    - **Min ---------- 9.32 Lbs**
    - **Max----------11.51 Lbs**
- **After 75 Cycles**
  - **Mating**
    - **Min ----------13.23 Lbs**
    - **Max----------16.92 Lbs**
  - **Unmating**
    - **Min ---------- 9.75 Lbs**
    - **Max----------12.03 Lbs**
- **After 100 Cycles**
  - **Mating**
    - **Min ----------14.09 Lbs**
    - **Max----------17.56 Lbs**
  - **Unmating**
    - **Min ----------10.12 Lbs**
    - **Max----------12.42 Lbs**
- **Humidity**
  - **Mating**
    - **Min ---------- 7.43 Lbs**
    - **Max---------- 9.73 Lbs**
  - **Unmating**
    - **Min ---------- 6.22 Lbs**
    - **Max---------- 7.43 Lbs**

RESULTS Continued

Mating\Unmating Basic – 20 position

- **Initial**
  - **Mating**
    - **Min ---------- 7.05 Lbs**
    - **Max---------- 7.66 Lbs**
  - **Unmating**
    - **Min ---------- 5.26 Lbs**
    - **Max---------- 5.93 Lbs**
- **After 25 Cycles**
  - **Mating**
    - **Min ---------- 7.12 Lbs**
    - **Max---------- 7.61 Lbs**
  - **Unmating**
    - **Min ---------- 5.12 Lbs**
    - **Max---------- 5.76 Lbs**
- **After 50 Cycles**
  - **Mating**
    - **Min ---------- 7.23 Lbs**
    - **Max---------- 7.63 Lbs**
  - **Unmating**
    - **Min ---------- 5.19 Lbs**
    - **Max---------- 5.82 Lbs**
- **After 75 Cycles**
  - **Mating**
    - **Min ---------- 7.32 Lbs**
    - **Max---------- 7.70 Lbs**
  - **Unmating**
    - **Min ---------- 5.22 Lbs**
    - **Max---------- 5.91 Lbs**
- **After 100 Cycles**
  - **Mating**
    - **Min ---------- 7.40 Lbs**
    - **Max---------- 7.74 Lbs**
  - **Unmating**
    - **Min ---------- 5.25 Lbs**
    - **Max---------- 5.97 Lbs**

RESULTS Continued

Mating\Unmating Basic – 05 position

- **Initial**
  - **Mating**
    - **Min ---------- 1.69 Lbs**
    - **Max---------- 2.45 Lbs**
  - **Unmating**
    - **Min ---------- 1.34 Lbs**
    - **Max---------- 1.74 Lbs**
- **After 25 Cycles**
  - **Mating**
    - **Min ---------- 1.65 Lbs**
    - **Max---------- 2.41 Lbs**
  - **Unmating**
    - **Min ---------- 1.38 Lbs**
    - **Max---------- 1.75 Lbs**
- **After 50 Cycles**
  - **Mating**
    - **Min ---------- 1.86 Lbs**
    - **Max---------- 2.48 Lbs**
  - **Unmating**
    - **Min ---------- 1.45 Lbs**
    - **Max---------- 1.89 Lbs**
- **After 75 Cycles**
  - **Mating**
    - **Min ---------- 1.95 Lbs**
    - **Max---------- 2.43 Lbs**
  - **Unmating**
    - **Min ---------- 1.55 Lbs**
    - **Max---------- 1.82 Lbs**
- **After 100 Cycles**
  - **Mating**
    - **Min ---------- 2.06 Lbs**
    - **Max---------- 2.58 Lbs**
  - **Unmating**
    - **Min ---------- 1.61 Lbs**
    - **Max---------- 1.88 Lbs**

Normal Force at 0.080 mm deflection

- **Initial**
  - **Min----------48.50 gf Set ----- 0.0000 mm**
  - **Max ----------62.10 gf Set ----- 0.0200 mm**
- **Thermal**
  - **Min----------49.70 gf Set------ 0.0000 mm**
  - **Max ----------63.40 gf Set------ 0.0160 mm**
  -

RESULTS Continued

Insulation Resistance minimums, IR

Pin to Pin

- **Initial**
  - **Mated ---------- 10000Meg Ω ---------- Pass**
  - **Unmated ---------- 10000Meg Ω ---------- Pass**
- **Thermal**
  - **Mated ---------- 10000Meg Ω ---------- Pass**
  - **Unmated ---------- 10000Meg Ω ---------- Pass**
- **Humidity**
  - **Mated ---------- 5897Meg Ω ---------- Pass**
  - **Unmated ---------- 6384Meg Ω ---------- Pass**

Row to Row

- **Initial**
  - **Mated ---------- 10000Meg Ω ---------- Pass**
  - **Unmated ---------- 10000Meg Ω ---------- Pass**
- **Thermal**
  - **Mated ---------- 10000Meg Ω ---------- Pass**
  - **Unmated ---------- 10000Meg Ω ---------- Pass**
- **Humidity**
  - **Mated ---------- 10000Meg Ω ---------- Pass**
  - **Unmated ---------- 10000Meg Ω ---------- Pass**

Dielectric Withstanding Voltage minimums, DWV

- **Minimums**
  - **Breakdown Voltage ---------- 875VAC**
  - **Test Voltage ---------- 656VAC**
  - **Working Voltage ---------- 219VAC**

Pin to Pin

- **Initial DWV ---------- Passed**
- **Thermal DWV ---------- Passed**
- **Humidity DWV ---------- Passed**

Row to Row

- **Initial DWV ---------- Passed**
- **Thermal DWV ---------- Passed**
- **Humidity DWV ---------- Passed**

LLCR Gas Tight (192 LLCR test points)

- **Initial ---------- 15.78 mOhms Max**
- **Gas-Tight**
  - **<= +5.0 mOhms ---------- 192 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 0Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +2000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+2000 mOhms ---------- 0 Points ---------- Open Failure**

LLCR Thermal Aging (192 LLCR test points)

- **Initial ---------- 15.44 mOhms Max**
- **Thermal**
  - **<= +5.0 mOhms ---------- 192 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 0 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +2000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+2000 mOhms ---------- 0 Points ---------- Open Failure**

RESULTS Continued

LLCR Durability (192 LLCR test points)

- **Initial ---------- 15.70 mOhms Max**
- **Durability, 100 Cycles**
  - **<= +5.0 mOhms ---------- 192 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 0 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +2000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+2000 mOhms ---------- 0 Points ---------- Open Failure**
- **Thermal**
  - **<= +5.0 mOhms ---------- 192 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 0 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +2000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+2000 mOhms ---------- 0 Points ---------- Open Failure**
- **Humidity**
  - **<= +5.0 mOhms ---------- 192 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 0 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +2000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+2000 mOhms ---------- 0 Points ---------- Open Failure**

LLCR Mechanical Shock & Random Vibration (192 LLCR test points)

- **Initial ---------- 16.06mOhms Max**
- **Shock & Vibration**
  - **<= +5.0 mOhms ---------- 192 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 0 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +2000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+2000 mOhms ---------- 0 Points ---------- Open Failure**

Mechanical Shock & Random Vibration:

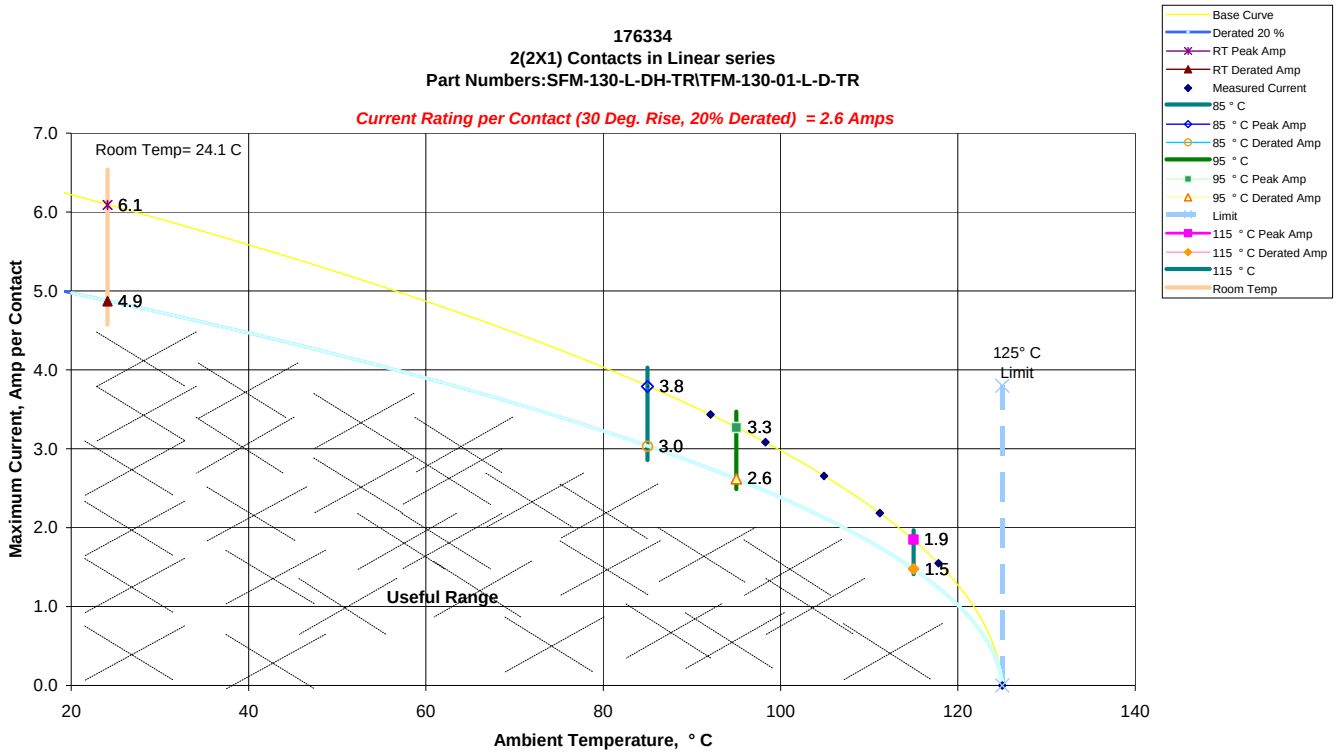
- **Shock**
  - **No Damage ---------- ---------- Passed**
  - **50 Nanoseconds ---------- ---------- Passed**
- **Vibration**
  - **No Damage ---------- ---------- Passed**
  - **50 Nanoseconds ---------- ---------- Passed**

DATA SUMMARIES

TEMPERATURE RISE (Current Carrying Capacity, CCC):

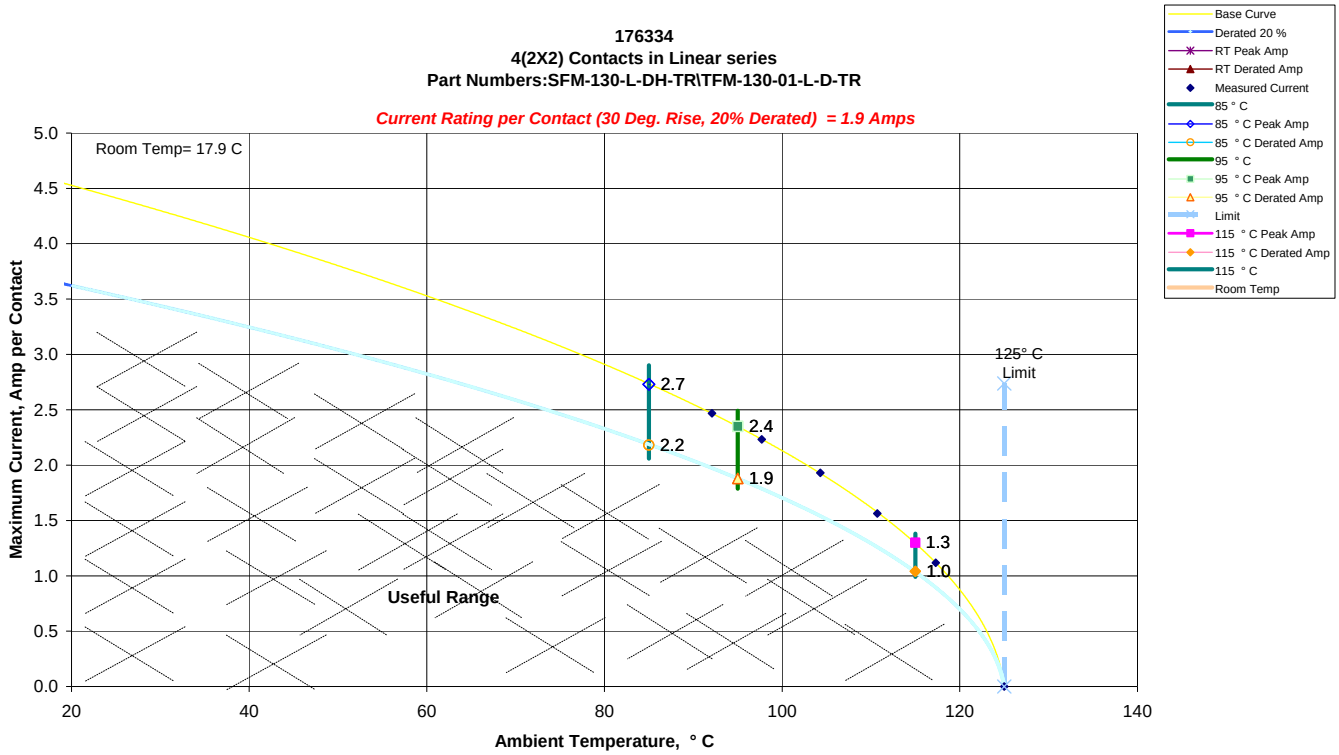
1) High quality thermocouples whose temperature slopes track one another were used for temperature monitoring.
2) The thermocouples were placed at a location to sense the maximum temperature generated during testing.
3) Temperature readings recorded are those for which three successive readings, 15 minutes apart, differ less than 1° C (computer controlled data acquisition).
4) Adjacent contacts were powered:

    a. Linear configuration with 2 adjacent conductors/contacts powered



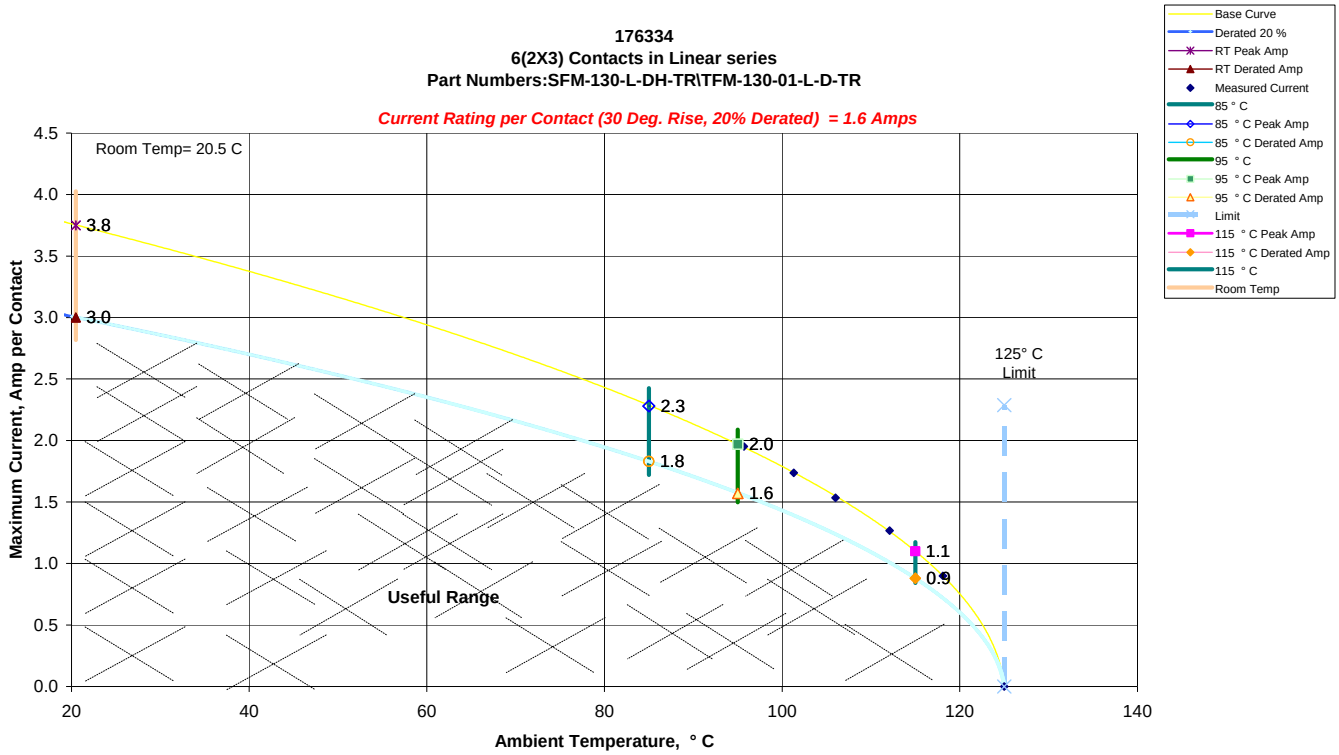
DATA SUMMARIES Continued

b. Linear configuration with 4 adjacent conductors/contacts powered



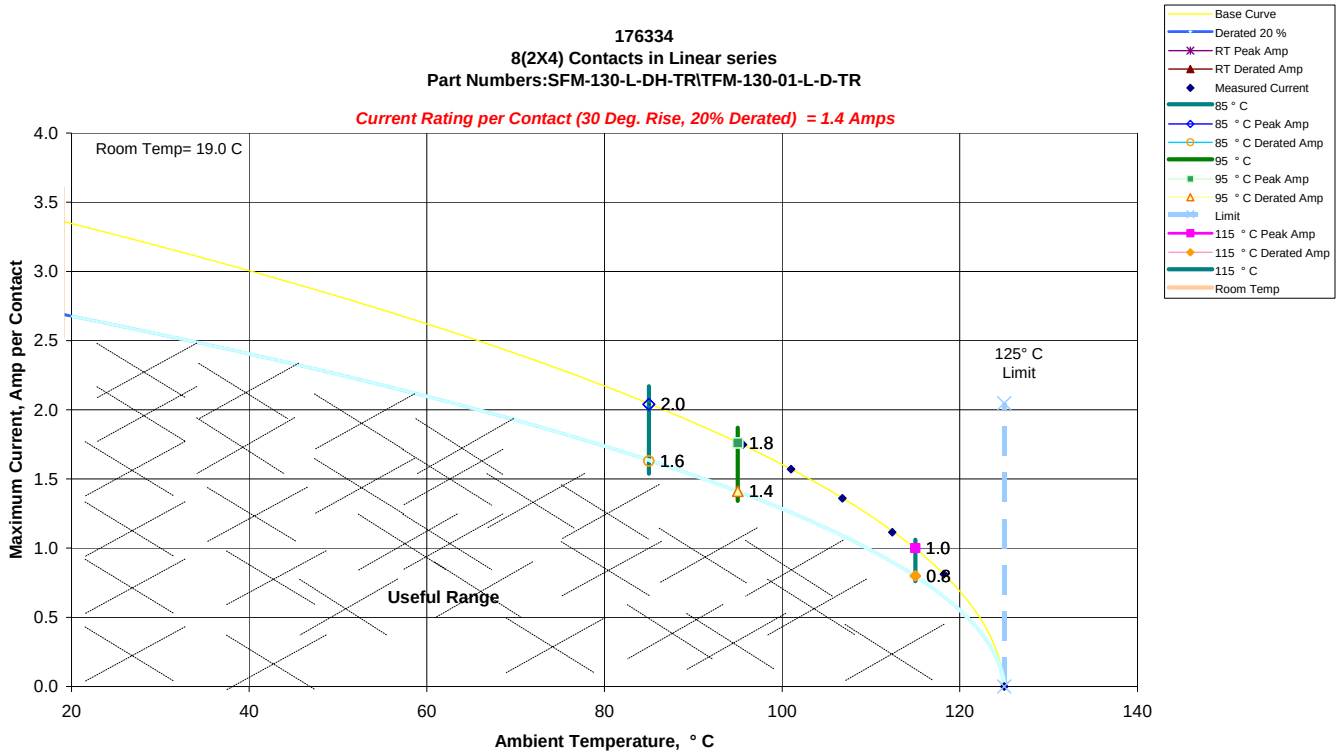
DATA SUMMARIES Continued

c. Linear configuration with 6 adjacent conductors/contacts powered



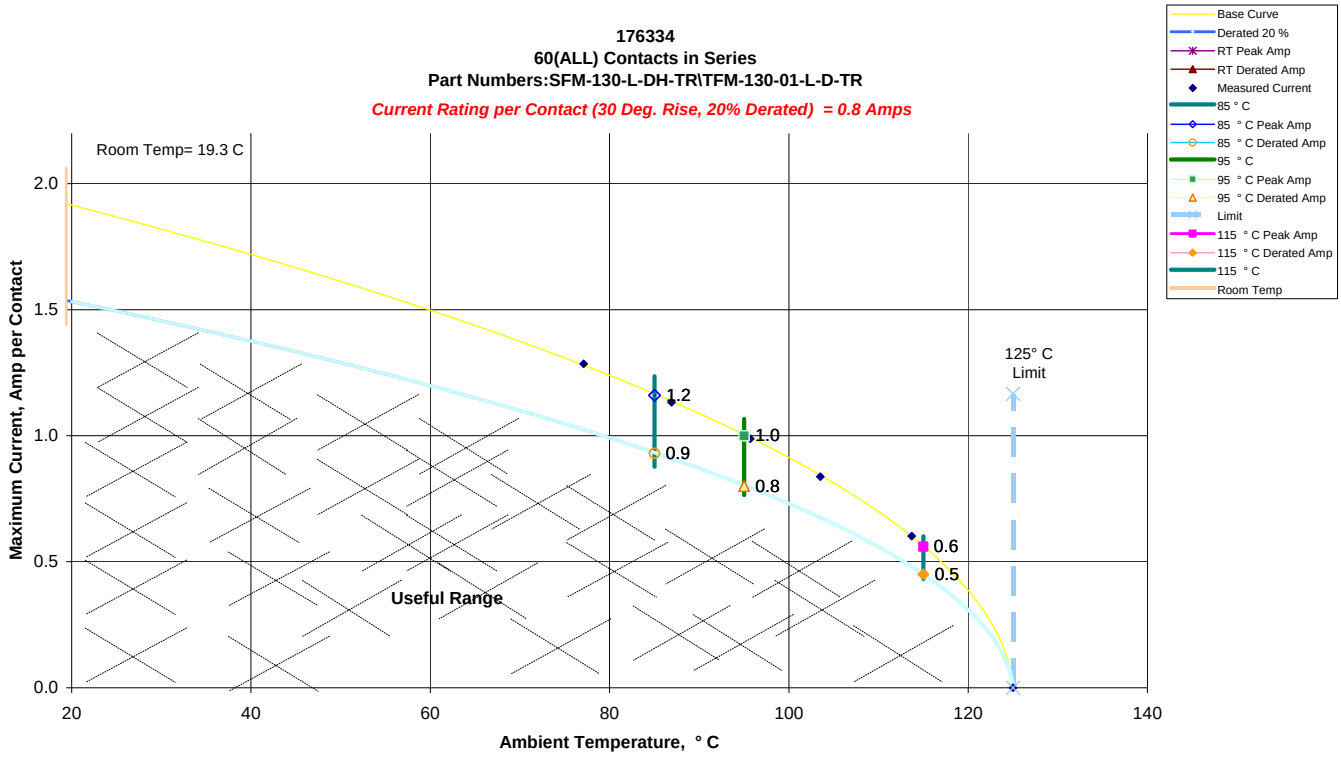
DATA SUMMARIES Continued

d. Linear configuration with 8 adjacent conductors/contacts powered



DATA SUMMARIES Continued

e. Linear configuration with all adjacent conductors/contacts powered



DATA SUMMARIES Continued

CONTACT GAPS:

Normal Force Group

Group A1

Signal	
Nominal	0.013
Hi Limit	0.0145
Lo Limit	0.012
Min	0.0122
Max	0.0133
Avg	0.0126
St. Dev.	0.0003
Count	12

Group A2

Initial		After Thermal	
Signal		Signal	
Nominal	0.0130	*Nominal*	0.0130
Hi Limit	0.0145	*Hi Limit*	0.0145
Lo Limit	0.0120	*Lo Limit*	0.0120
Min	0.0121	*Min*	0.0134
Max	0.0135	*Max*	0.0143
Avg	0.0137	*Avg*	0.0140
St. Dev.	0.0004	*St. Dev.*	0.0003
Count	12	*Count*	12

Thermal Aging Group

Initial		After Thermal	
Signal		Signal	
Nominal	0.0130	*Nominal*	0.0130
Hi Limit	0.0145	*Hi Limit*	0.0145
Lo Limit	0.0120	*Lo Limit*	0.0120
Min	0.0118	*Min*	0.0127
Max	0.0144	*Max*	0.0145
Avg	0.0126	*Avg*	0.0137
St. Dev.	0.0006	*St. Dev.*	0.0004
Count	96	*Count*	96

Mating\Unmating Durability Group

Initial		After 100 cycles	
Signal		Signal	
Nominal	0.0130	Nominal	0.0130
Hi Limit	0.0145	Hi Limit	0.0145
Lo Limit	0.0120	Lo Limit	0.0120
Min	0.0117	Min	0.0118
Max	0.0139	Max	0.0143
Avg	0.0124	Avg	0.0126
St. Dev.	0.0003	St. Dev.	0.0003
Count	96	Count	96

DATA SUMMARIES Continued

MATING/UNMATING:

Thermal Aging Group

	Initial				After Thermals			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	54.13	12.17	39.32	8.84	36.83	8.28	27.89	6.27
Maximum	60.45	13.59	45.99	10.34	51.91	11.67	35.90	8.07
Average	57.38	**12.90**	42.27	**9.50**	42.76	**9.61**	31.39	**7.06**
St Dev	2.10	0.47	2.50	0.56	6.51	1.46	3.29	0.74
Count	8	8	8	8	8	8	8	8

Mating\Unmating Durability Group

	Initial				After 25 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	44.26	9.95	33.89	7.62	53.55	12.04	38.96	8.76
Maximum	56.49	12.70	41.99	9.44	65.79	14.79	47.46	10.67
Average	50.57	**11.37**	39.15	**8.80**	58.85	**13.23**	45.45	**10.22**
St Dev	4.43	1.00	2.33	0.52	4.80	1.08	2.89	0.65
Count	8	8	8	8	8	8	8	8
	After 50 Cycles				After 75 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	56.18	12.63	41.46	9.32	58.85	13.23	43.37	9.75
Maximum	70.10	15.76	51.20	11.51	75.26	16.92	53.51	12.03
Average	62.59	**14.07**	48.90	**10.99**	66.21	**14.89**	50.42	**11.34**
St Dev	5.26	1.18	3.32	0.75	6.43	1.45	3.37	0.76
Count	8	8	8	8	8	8	8	8
	After 100 Cycles				After Humidity			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	62.67	14.09	45.01	10.12	33.05	7.43	27.67	6.22
Maximum	78.11	17.56	55.24	12.42	43.28	9.73	33.05	7.43
Average	68.83	**15.48**	51.92	**11.67**	37.36	**8.40**	30.09	**6.76**
St Dev	5.84	1.31	3.43	0.77	3.14	0.71	1.82	0.41
Count	8	8	8	8	8	8	8	8

DATA SUMMARIES Continued

MATING/UNMATING:

Mating\Unmating Basic – 20 position

	Initial				After 25 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	31.36	7.05	23.40	5.26	31.67	7.12	22.77	5.12
Maximum	34.07	7.66	26.38	5.93	33.85	7.61	25.62	5.76
Average	32.90	**7.40**	24.73	**5.56**	32.72	**7.36**	24.29	**5.46**
St Dev	0.90	0.20	1.06	0.24	0.77	0.17	0.97	0.22
Count	8	8	8	8	8	8	8	8

	After 50 Cycles				After 75 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	32.16	7.23	23.09	5.19	32.56	7.32	23.22	5.22
Maximum	33.94	7.63	25.89	5.82	34.25	7.70	26.29	5.91
Average	32.90	**7.40**	24.60	**5.53**	33.36	**7.50**	25.03	**5.63**
St Dev	0.55	0.12	0.98	0.22	0.60	0.13	1.13	0.25
Count	8	8	8	8	8	8	8	8

	After 100 Cycles			
	Mating		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	32.92	7.40	23.35	5.25
Maximum	34.43	7.74	26.55	5.97
Average	33.62	**7.56**	25.35	**5.70**
St Dev	0.60	0.13	1.01	0.23
Count	8	8	8	8

DATA SUMMARIES Continued

MATING/UNMATING:

Mating\Unmating Basic – 05 position

	Initial				After 25 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	7.52	1.69	5.96	1.34	7.34	1.65	6.14	1.38
Maximum	10.90	2.45	7.74	1.74	10.72	2.41	7.78	1.75
Average	9.19	**2.07**	6.94	**1.56**	9.15	**2.06**	7.16	**1.61**
St Dev	1.28	0.29	0.74	0.17	1.29	0.29	0.62	0.14
Count	8	8	8	8	8	8	8	8

	After 50 Cycles				After 75 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	8.27	1.86	6.45	1.45	8.67	1.95	6.89	1.55
Maximum	11.03	2.48	8.41	1.89	10.81	2.43	8.10	1.82
Average	9.67	**2.18**	7.43	**1.67**	9.72	**2.19**	7.51	**1.69**
St Dev	1.14	0.26	0.68	0.15	0.84	0.19	0.50	0.11
Count	8	8	8	8	8	8	8	8

	After 100 Cycles			
	Mating		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	9.16	2.06	7.16	1.61
Maximum	11.48	2.58	8.36	1.88
Average	10.19	**2.29**	7.73	**1.74**
St Dev	0.87	0.19	0.48	0.11
Count	8	8	8	8

DATA SUMMARIES Continued

NORMAL FORCE (FOR CONTACTS TESTED OUTSIDE THE HOUSING):

1) Calibrated force gauges are used along with computer controlled positioning equipment.
2) Typically, 8-10 readings are taken and the averages reported.

Initial	Deflections in mm Forces in Grams							
	0.0200	0.0300	0.0400	0.0500	0.0600	0.0700	0.0800	SET
Averages	15.25	22.46	29.43	36.36	43.33	49.81	54.78	0.0057
Min	13.10	21.10	27.20	32.90	39.70	45.50	48.50	0.0000
Max	17.60	25.10	32.70	41.00	49.50	56.20	62.10	0.0200
St. Dev	1.383	1.134	1.585	2.185	2.658	3.034	4.048	0.0056
Count	12	12	12	12	12	12	12	12

After Thermals	Deflections in mm Forces in Grams							
	0.0200	0.0300	0.0400	0.0500	0.0600	0.0700	0.0800	SET
Averages	15.11	22.16	28.62	36.41	43.43	50.16	57.05	0.0065
Min	13.10	19.80	21.40	32.00	39.20	45.30	49.70	0.0000
Max	17.00	25.30	33.60	41.00	49.90	56.00	63.40	0.0160
St. Dev	1.287	1.674	3.212	2.772	3.390	3.740	4.464	0.0049
Count	12	12	12	12	12	12	12	12

INSULATION RESISTANCE (IR):

	Pin to Pin		
	Mated	Unmated	Unmated
Minimum	SFM/TFM	SFM	TFM
Initial	10000	10000	10000
Thermal	10000	10000	10000
Humidity	5897	6384	10000

	Row to Row		
	Mated	Unmated	Unmated
Minimum	SFM/TFM	SFM	TFM
Initial	10000	10000	10000
Thermal	10000	10000	10000
Humidity	10000	10000	10000

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

Voltage Rating Summary	
Minimum	SFM/TFM
Break Down Voltage	875
Test Voltage	656
Working Voltage	219

Pin to Pin	
Initial Test Voltage	Passed
After Thermal Test Voltage	Passed
After Humidity Test Voltage	Passed

Row to Row	
Initial Test Voltage	Passed
After Thermal Test Voltage	Passed
After Humidity Test Voltage	Passed

DATA SUMMARIES Continued

LLCR Durability:

1) A total of 192points were measured.
2) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets.*
3) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
4) The following guidelines are used to categorize the changes in LLCR as a result from stressing.
   a. <= +5.0 mOhms: ---------- Stable
   b. +5.1 to +10.0 mOhms:---------- Minor
   c. +10.1 to +15.0 mOhms: ---------- Acceptable
   d. +15.1 to +50.0 mOhms: ---------- Marginal
   e. +50.1 to +2000 mOhms ---------- Unstable
   f. >+2000 mOhms:---------- Open Failure

LLCR Measurement Summaries by Pin Type				
Date	2011-12-27	2011-12-27	2012-1-2	2012-1-13
Room Temp (Deg C)	21	21	23	21
Rel Humidity (%)	36	36	45	52
Technician	Kason He	Kason He	Peter Chen	Kason He
mOhm values	**Actual Initial**	**Delta 100 Cycles**	**Delta Therm Shck**	**Delta Humidity**
Pin Type 1: Row 1				
Average	12.05	0.95	0.72	0.60
St. Dev.	0.81	0.69	0.61	0.67
Min	10.90	0.00	0.01	0.00
Max	14.01	2.24	2.16	2.47
Summary Count	96	96	96	96
Total Count	96	96	96	96
Pin Type 2: Row 2				
Average	14.65	0.39	0.61	0.33
St. Dev.	0.49	0.31	0.31	0.25
Min	13.18	0.00	0.00	0.01
Max	15.70	2.60	1.70	0.94
Summary Count	96	96	96	96
Total Count	96	96	96	96

LLCR Delta Count by Category						
	Stable	**Minor**	**Acceptable**	**Marginal**	**Unstable**	**Open**
mOhms	**<=5**	**>5 & <=10**	**>10 & <=15**	**>15 & <=50**	**>50 & <=1000**	**>1000**
100 Cycles	**192**	**0**	**0**	**0**	**0**	**0**
Therm Shck	**192**	**0**	**0**	**0**	**0**	**0**
Humidity	**192**	**0**	**0**	**0**	**0**	**0**

DATA SUMMARIES Continued

LLCR Thermal:

1) A total of 192 points were measured.
2) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets.*
3) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
4) The following guidelines are used to categorize the changes in LLCR as a result from stressing.
   a. <= +5.0 mOhms: ---------- Stable
   b. +5.1 to +10.0 mOhms:---------- Minor
   c. +10.1 to +15.0 mOhms: ---------- Acceptable
   d. +15.1 to +50.0 mOhms: ---------- Marginal
   e. +50.1 to +2000 mOhms ---------- Unstable
   g. >+2000 mOhms: ---------- Open Failure

LLCR Measurement Summaries by Pin Type		
Date	2011-12-26	2012-1-5
Room Temp (Deg C)	20	19
Rel Humidity (%)	36	38
Technician	Kason He	kason he
mOhm values	**Actual Initial**	**Delta Thermal**
	Pin Type 1: Signal	
Average	11.89	0.59
St. Dev.	0.61	0.60
Min	11.05	0.00
Max	13.46	2.16
Summary Count	96	96
Total Count	96	96
	Pin Type 2:	
Average	14.67	0.33
St. Dev.	0.47	0.18
Min	13.22	0.00
Max	15.44	0.88
Summary Count	96	96
Total Count	96	96

LLCR Delta Count by Category						
	Stable	**Minor**	**Acceptable**	**Marginal**	**Unstable**	**Open**
mOhms	**<=5**	**>5 & <=10**	**>10 & <=15**	**>15 & <=50**	**>50 & <=1000**	**>1000**
Thermal	**192**	**0**	**0**	**0**	**0**	**0**

DATA SUMMARIES Continued

GAS TIGHT:

1) A total of 192 points were measured.
2) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets.*
3) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
4) The following guidelines are used to categorize the changes in LLCR as a result from stressing.
   a. <= +5.0 mOhms: ---------- Stable
   b. +5.1 to +10.0 mOhms:---------- Minor
   c. +10.1 to +15.0 mOhms: ---------- Acceptable
   d. +15.1 to +50.0 mOhms: ---------- Marginal
   e. +50.1 to +2000 mOhms: ---------- Unstable
   f. >+2000 mOhms:---------- Open Failure

LLCR Measurement Summaries by Pin Type		
Date	2011-12-27	40904
Room Temp (Deg C)	21	21
Rel Humidity (%)	36	36
Technician	Kason He	Kason He
mOhm values	**Actual Initial**	**Delta Acid Vapor**
	Pin Type 1: Row 1	
Average	13.05	0.82
St. Dev.	0.52	0.54
Min	11.44	0.01
Max	13.86	1.93
Summary Count	96	96.00
Total Count	96	96.00
	Pin Type 2: Row 2	
Average	14.72	0.37
St. Dev.	0.45	0.16
Min	13.52	0.00
Max	15.78	0.77
Summary Count	96	96.00
Total Count	96	96.00

LLCR Delta Count by Category						
	Stable	**Minor**	**Acceptable**	**Marginal**	**Unstable**	**Open**
mOhms	**<=5**	**>5 & <=10**	**>10 & <=15**	**>15 & <=50**	**>50 & <=1000**	**>1000**
Acid Vapor	**192**	**0**	**0**	**0**	**0**	**0**

DATA SUMMARIES Continued

LLCR Shock & Vibration:

1) A total of 192 points were measured.
2) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets.*
3) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
4) The following guidelines are used to categorize the changes in LLCR as a result from stressing.
   a. <= +5.0 mOhms: ---------- Stable
   b. +5.1 to +10.0 mOhms:---------- Minor
   c. +10.1 to +15.0 mOhms: ---------- Acceptable
   d. +15.1 to +50.0 mOhms: ---------- Marginal
   e. +50.1 to +2000 mOhms ---------- Unstable
   f. >+2000 mOhms:---------- Open Failure

LLCR Measurement Summaries by Pin Type		
Date	2012-1-6	40934
Room Temp (Deg C)	22	22
Rel Humidity (%)	33	35
Technician	Aaron McKim	Aaron McKim
mOhm values	**Actual Initial**	**Delta Shock-Vib**
	Pin Type 1: Row 1	
Average	12.39	0.41
St. Dev.	0.70	0.35
Min	11.11	0.00
Max	13.66	1.73
Summary Count	96	96.00
Total Count	96	96.00
	Pin Type 2: Row 2	
Average	15.01	0.67
St. Dev.	0.50	0.48
Min	13.97	0.01
Max	16.06	2.91
Summary Count	96	96.00
Total Count	96	96.00

LLCR Delta Count by Category						
	Stable	**Minor**	**Acceptable**	**Marginal**	**Unstable**	**Open**
mOhms	**<=5**	**>5 & <=10**	**>10 & <=15**	**>15 & <=50**	**>50 & <=1000**	**>1000**
Shock-Vib	**192**	**0**	**0**	**0**	**0**	**0**

Nanosecond Event Detection:

Shock and Vibration Event Detection Summary	
Contacts tested	40
Test Condition	C, 100g's, 6ms, Half-Sine
Shock Events	0
Test Condition	V-B, 7.56 rms g
Vibration Events	0
Total Events	0

EQUIPMENT AND CALIBRATION SCHEDULES

Equipment #: HZ-TCT-01
Description: Normal force analyzer
Manufacturer: Mecmesin Multitester
Model: Mecmesin Multitester 2.5-i
Serial #: 08-1049-04
Accuracy: Last Cal: 4/27/2011, Next Cal: 4/26/2012

Equipment #: HZ-OV-01
Description: Oven
Manufacturer: Huida
Model: CS101-1E
Serial #: CS101-1E-B
Accuracy: Last Cal: 12/13/2011, Next Cal: 12/12/2012

Equipment #: HZ-THC-01
Description: Humidity transmitter
Manufacturer: Thermtron
Model: HMM30C
Serial #: D0240037
Accuracy: Last Cal: 3/1/2011, Next Cal: 2/28/2012

Equipment #: HZ-OGP-01
Description: Video measurement system
Manufacturer: OGP
Model: SMARTSCOPE FLASH 200
Serial #: SVW2003632
Accuracy: Last Cal: 6/9/2011, Next Cal: 6/8/2012

Equipment #: HZ-MO-01
Description: Micro-ohmmeter
Manufacturer: Keithley
Model: 2700
Serial #: 1199807
Accuracy: Last Cal: 4/27/2011, Next Cal: 4/26/2012

Equipment #: HZ-PS-01
Description: Power Supply
Manufacturer: Agilent
Model: 6031A
Serial #: MY41000982
Accuracy: Last Cal: 4/27/2011, Next Cal: 4/26/2012

EQUIPMENT AND CALIBRATION SCHEDULES Continued

Equipment #: HZ-HPM-01
Description: NA9636H
Manufacturer: Ainuo
Model: 6031A
Serial #: 089601091
Accuracy: Last Cal: 3/8/2011, Next Cal: 3/7/2012

Equipment #: SVC-01
Description: Shock & Vibration Table
Manufacturer: Data Physics
Model: LE-DSA-10-20K
Serial #: 10037
Accuracy: See Manual
… Last Cal: 11/31/2011, Next Cal: 11/31/2012

Equipment #: ACLM-01
Description: Accelerometer
Manufacturer: PCB Piezotronics
Model: 352C03
Serial #: 115819
Accuracy: See Manual
… Last Cal: 07/09/2011, Next Cal: 07/09/2012

Equipment #: ED-03
Description: Event Detector
Manufacturer: Analysis Tech
Model: 32EHD
Serial #: 1100604
Accuracy: See Manual
… Last Cal: 06/04/2011, Next Cal: 06/04/2012

Equipment #: HZ-TSC-01
Description: Vertical Thermal Shock Chamber
Manufacturer: Cincinnatti Sub Zero
Model: VTS-3-6-6-SC/AC
Serial #: 10-VT14994
Accuracy: See Manual
… Last Cal: 06/28/2011, Next Cal: 06/27/2012