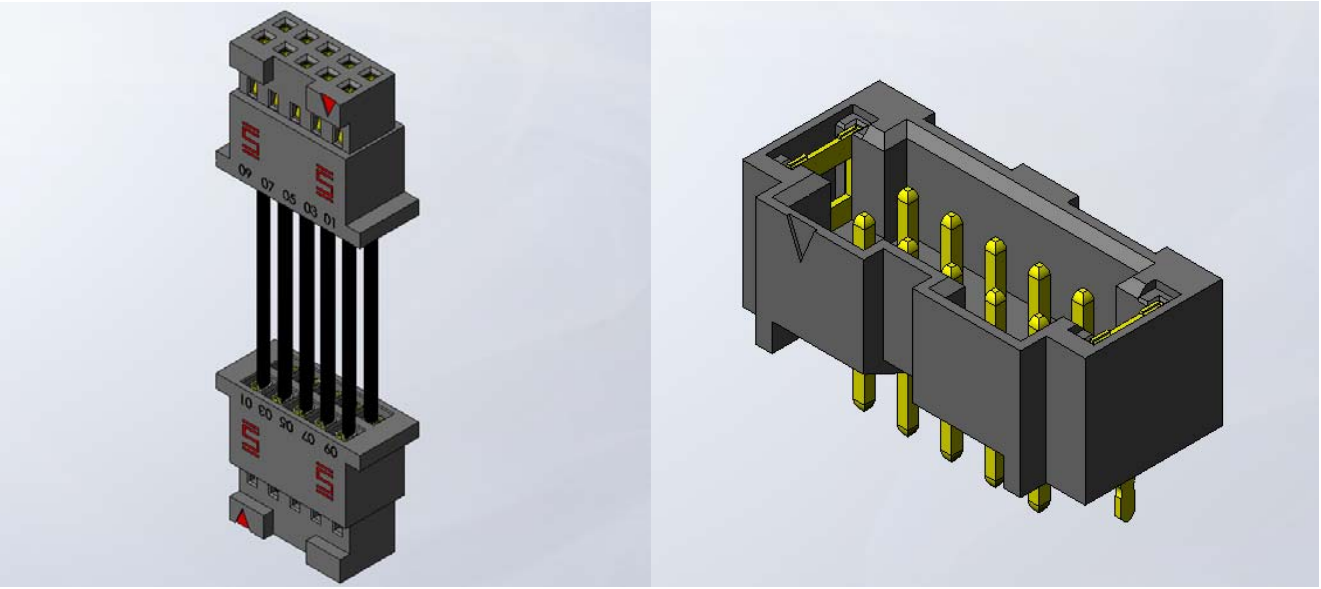
Project Number: Design Verification Test	Tracking Code: TC0946—2877_Report_Rev_1		
Requested by: Brandon Harpenau	Date: 1/29/2010	Product Rev: 0	
Part #: S2SD-30-24-L-02.75-D-NUS / T2M-130-01-L-D-TH	Lot #: 1	Tech: Rodney Riley Tony Wagoner	Eng: Eric Mings Mark Shireman
Part description: 2.00mm Socket Discrete Cable Assembly			Qty to test: 100
Test Start: 11/09/2009	Test Completed: 1/20/2010		



Design Verification Test Report

PART DESCRIPTION

S2SD-30-24-L-02.75-D-NUS
T2M-130-01-L-D-TH

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 verification test

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) Samtec Test PCBs used: PCB-101960-TST / PCB-101961-TST

FLOWCHARTS

Gas Tight

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

Gas Tight = EIA-364-36A

LLCR = EIA-364-23, LLCR

use Keithley 580 in the dry circuit mode, 10 mA Max

Mating/Unmating/Gaps/Normal Force/Deflection Force

TEST STEP	GROUP A 10 Boards	GROUP B1 Individual Contacts (5 min)	GROUP B2 Individual Contacts (5 min)
01	Contact Gaps	Setup Approved	Setup Approved
02	Mating / Unmating	Normal Force	Thermal Aging (Mated)
03	25 Cycles		Normal Force
04	Clean w/Compressed Air		
05	Mating / Unmating		
06	25 Cycles (50 Total)		
07	Clean w/Compressed Air		
08	Mating / Unmating		
09	25 Cycles (75 Total)		
10	Clean w/Compressed Air		
11	Mating / Unmating		
12	25 Cycles (100 Total)		
13	Clean w/Compressed Air		
14	Mating / Unmating		
15	Contact Gaps		
16	Thermal Aging (Mated)		
17	Mating / Unmating		
18	Contact Gaps		
19	Cyclic Humidity (Mated)		
20	Mating / Unmating		

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

Time Condition 'B' (250 hours)

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/Un-Mating Forces = EIA-364-13

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

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 B 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 Aging (both sets unmated)
03				IR & DWV at test voltage (on both mated sets and on each connector unmated)
04				Cyclic Humidity (both sets unmated)
05				IR & DWV at test voltage (on both mated sets and on each connector unmated)

*** - DWV on group B to be performed at Test Voltage**
DWV test voltage is equal to 75% of the lowest break down voltage from group A1, A2 or A3
Thermal Aging = EIA-364-17, Test Condition 4 (105 °C)
Time Condition 'B' (250 hours)
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

Durability/Thermal Age/Cyclic Humidity

TEST STEP	GROUP A 192 Points Min 50 Cycles	GROUP B 192 Points Min 100 Cycles
01	LLCR-1	LLCR-1
02	50 Cycles	100 Cycles
03	Clean Mating Interface	Clean Mating Interface
04	LLCR-2	LLCR-2
05	Thermal Age (Mated and undisturbed)	Thermal Age (Mated and undisturbed)
06	LLCR-3	LLCR-3
07	Cyclic Humidity (Mated and undisturbed)	Cyclic Humidity (Mated and undisturbed)
08	LLCR-4	LLCR-4

Thermal Aging = EIA-364-17, Test Condition 4, 105 deg C;
Time Condition 'B' (250 hours)
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
LLCR = EIA-364-23, LLCR
use Keithley 580 in the dry circuit mode, 10 mA Max

Current Carrying Capacity

TEST STEP	GROUP A 3 Mated Assemblies 2 CONTACT POWERED	GROUP B 3 Mated Assemblies 4 CONTACTS POWERED	GROUP C 3 Mated Assemblies 6 CONTACTS POWERED	GROUP D 3 Mated Assemblies 8 CONTACTS POWERED	GROUP E 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

ATTRIBUTE DEFINITIONS

The following is a brief, simplified description of attributes.

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.

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:

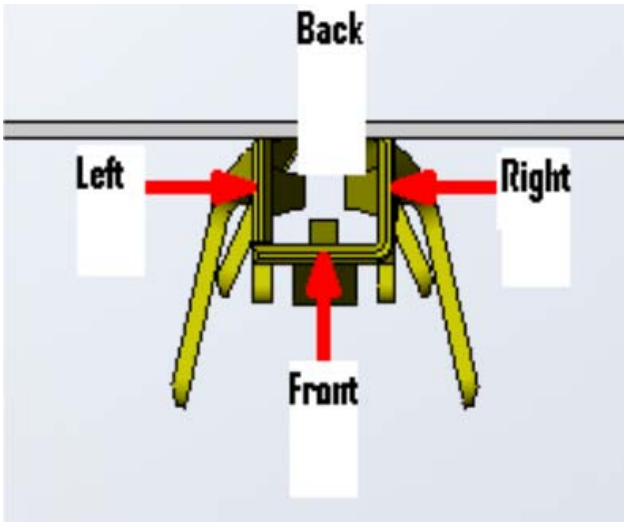
1) Gaps above the surrounding plastic surface were measured before and after stressing the contacts (e.g. thermal aging, mechanical cycling, etc.).
2) Typically, all contacts on the connector are measured.

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.

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.
16) Legend to use for testing:



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

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----------3.8A per contact with 2 adjacent contacts powered**
- **CCC for a 30°C Temperature Rise----------3.0A per contact with 4 adjacent contacts powered**
- **CCC for a 30°C Temperature Rise----------2.6A per contact with 6 adjacent contacts powered**
- **CCC for a 30°C Temperature Rise----------2.4A per contact with 8 adjacent contacts powered**
- **CCC for a 30°C Temperature Rise----------1.6A per contact with all adjacent contacts powered, thermocouple located on contacts**
- **CCC for a 30°C Temperature Rise----------1.9A per contact with all adjacent contacts powered, thermocouple located on cable**

Contact Gaps (X-Axis)

- **Initial**
  - **Min---------- 0.2660 mm**
  - **Max ---------- 0.3280 mm**
- **After 100 Cycles**
  - **Min---------- 0.2800 mm**
  - **Max ---------- 0.4700 mm**
- **Thermal**
  - **Min---------- 0.3020 mm**
  - **Max ---------- 0.4780 mm**

Contact Gaps (Y-Axis)

- **Initial**
  - **Min---------- 0.3520 mm**
  - **Max ---------- 0.4320 mm**
- **After 100 Cycles**
  - **Min---------- 0.3760 mm**
  - **Max ---------- 0.4480 mm**
- **Thermal**
  - **Min---------- 0.3720 mm**
  - **Max ---------- 0.4680 mm**

Mating – Unmating Forces

- **Initial**
  - **Mating**
    - **Min ----------10.23 Lbs**
    - **Max----------12.99 Lbs**
  - **Unmating**
    - **Min ---------- 7.93 Lbs**
    - **Max---------- 9.51 Lbs**
- **After 25 Cycles**
  - **Mating**
    - **Min ---------- 8.73 Lbs**
    - **Max----------12.44 Lbs**
  - **Unmating**
    - **Min ---------- 7.32 Lbs**
    - **Max----------10.01 Lbs**
- **After 50 Cycles**
  - **Mating**
    - **Min ---------- 9.29 Lbs**
    - **Max----------12.75 Lbs**
  - **Unmating**
    - **Min ---------- 7.41 Lbs**
    - **Max----------11.53 Lbs**
- **After 75 Cycles**
  - **Mating**
    - **Min ---------- 8.66 Lbs**
    - **Max----------12.98 Lbs**
  - **Unmating**
    - **Min ---------- 6.26 Lbs**
    - **Max----------12.04 Lbs**
- **After 100 Cycles**
  - **Mating**
    - **Min ---------- 8.91 Lbs**
    - **Max----------12.19 Lbs**
  - **Unmating**
    - **Min ---------- 7.69 Lbs**
    - **Max----------11.71 Lbs**
- **Thermal**
  - **Mating**
    - **Min ---------- 6.56 Lbs**
    - **Max---------- 8.74 Lbs**
  - **Unmating**
    - **Min ---------- 6.43 Lbs**
    - **Max---------- 8.05 Lbs**
- **Humidity**
  - **Mating**
    - **Min ---------- 6.40 Lbs**
    - **Max---------- 8.36 Lbs**
  - **Unmating**
    - **Min ---------- 5.97 Lbs**
    - **Max---------- 7.55 Lbs**

Normal Force:

Left Beam at .005" deflection

- **Initial**
  - **Min----------55.09 g Set ----- 0.0002"**
  - **Max ----------66.36 g Set ----- 0.0007"**
- **Thermal**
  - **Min----------60.29 g**
  - **Max ----------76.63 g**

Right Beam at .005" deflection

- **Initial**
  - **Min----------65.42 g Set ----- 0.0008"**
  - **Max ----------72.15 g Set ----- 0.0010"**
- **Thermal**
  - **Min----------69.68 g**
  - **Max ----------77.94 g**

Front Beam at .003" deflection

- **Initial**
  - **Min----------52.59 g Set ----- 0.0002"**
  - **Max ----------62.96 g Set ----- 0.0004"**
- **Thermal**
  - **Min----------61.60 g**
  - **Max ----------70.70 g**

Back Beam at .003" deflection

- **Initial**
  - **Min----------52.15 g Set ----- 0.0001"**
  - **Max ----------60.77 g Set ----- 0.0006"**
- **Thermal**
  - **Min----------60.50 g**
  - **Max ----------70.30 g**

Insulation Resistance minimums, IR

- **Initial**
  - **Mated----------100,000 Meg Ω ---------- Pass**
  - **Unmated ----------100,000 Meg Ω ---------- Pass**
- **Thermal**
  - **Mated----------100,000 Meg Ω ---------- Pass**
  - **Unmated ----------100,000 Meg Ω ---------- Pass**
- **Humidity**
  - **Mated----------100,000 Meg Ω ---------- Pass**
  - **Unmated ----------100,000 Meg Ω ---------- Pass**

Dielectric Withstanding Voltage minimums, DWV

- **Minimums**
  - **Breakdown Voltage----------1,000 VAC**
  - **Test Voltage ----------750 VAC**
  - **Working Voltage ----------250 VAC**
- **Initial DWV ----------Passed**
- **Thermal DWV----------Passed**
- **Humidity DWV----------Passed**

LLCR Durability, 50 Cycles (219 LLCR test points)
Part 4, Position 13 was deleted due to contact damage during assembly)

- **Initial ---------- 12.1 mOhms Max**
- **Durability, 50 Cycles**
  - **<= +5.0 mOhms ---------- 219 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 ---------- 219 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 ---------- 215 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 4 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 Durability, 100 Cycles (220 LLCR test points)

- **Initial ---------- 12.5 mOhms Max**
- **Durability, 100 Cycles**
  - **<= +5.0 mOhms ---------- 220 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 ---------- 220 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 ---------- 220 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 Gas Tight (176 LLCR test points)

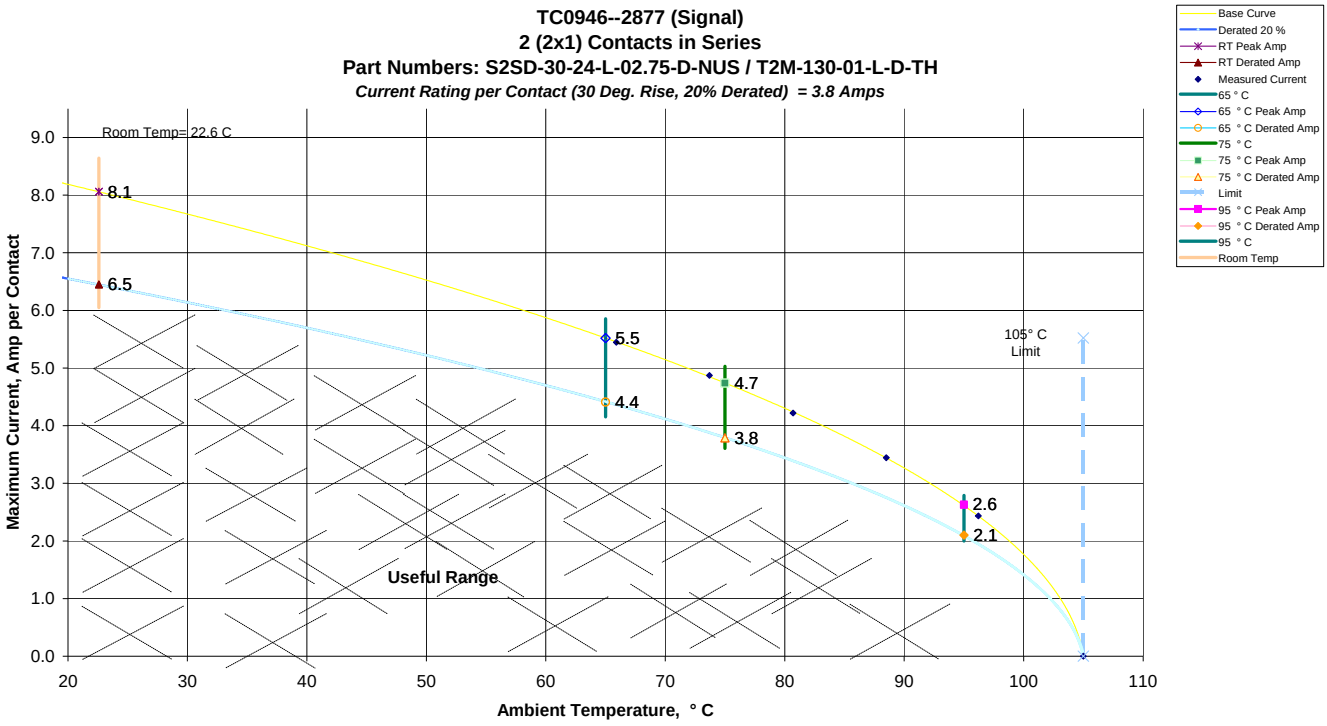
- **Initial ---------- 16.8 mOhms Max**
- **Gas-Tight**
  - **<= +5.0 mOhms ---------- 176 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 0 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +2000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+2000 mOhms ---------- 0 Points ---------- Open Failure**

DATA SUMMARIES

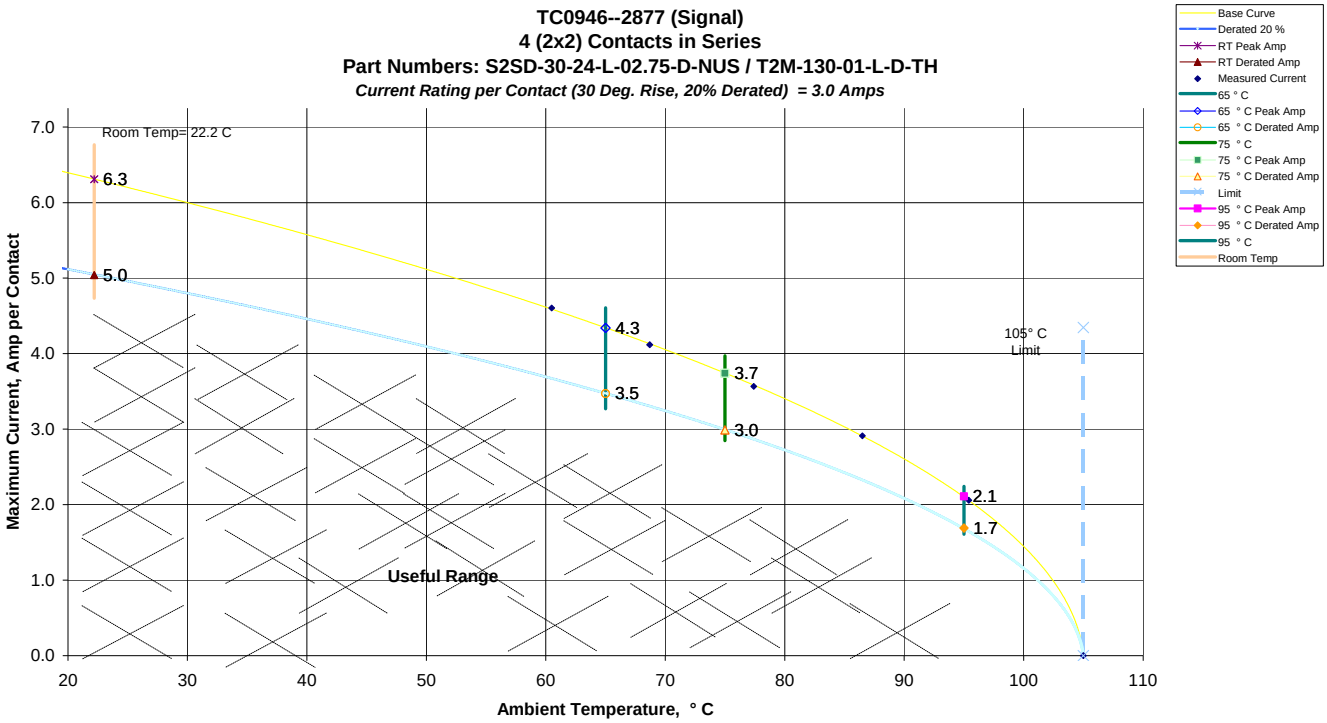
TEMPERATURE RISE (Current Carrying Capacity, CCC):

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:

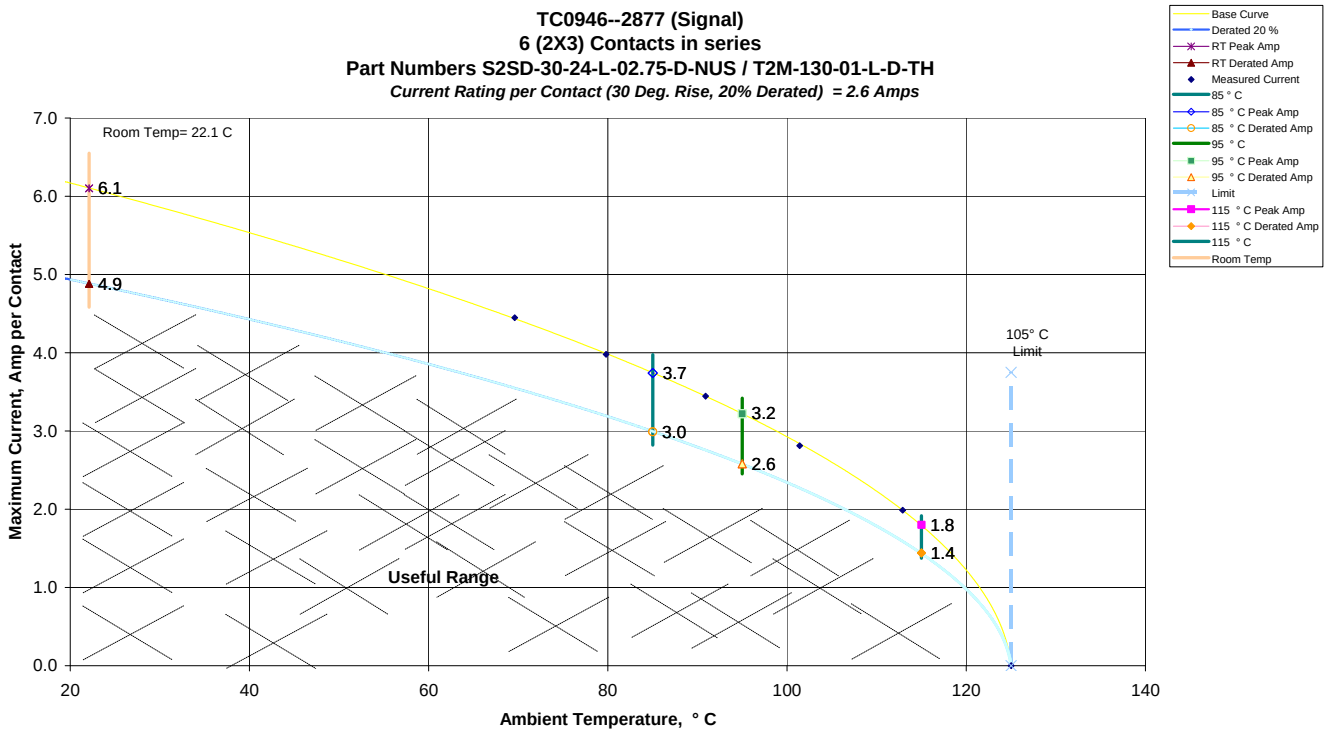
    a. Linear configuration with 2 adjacent conductors/contacts powered



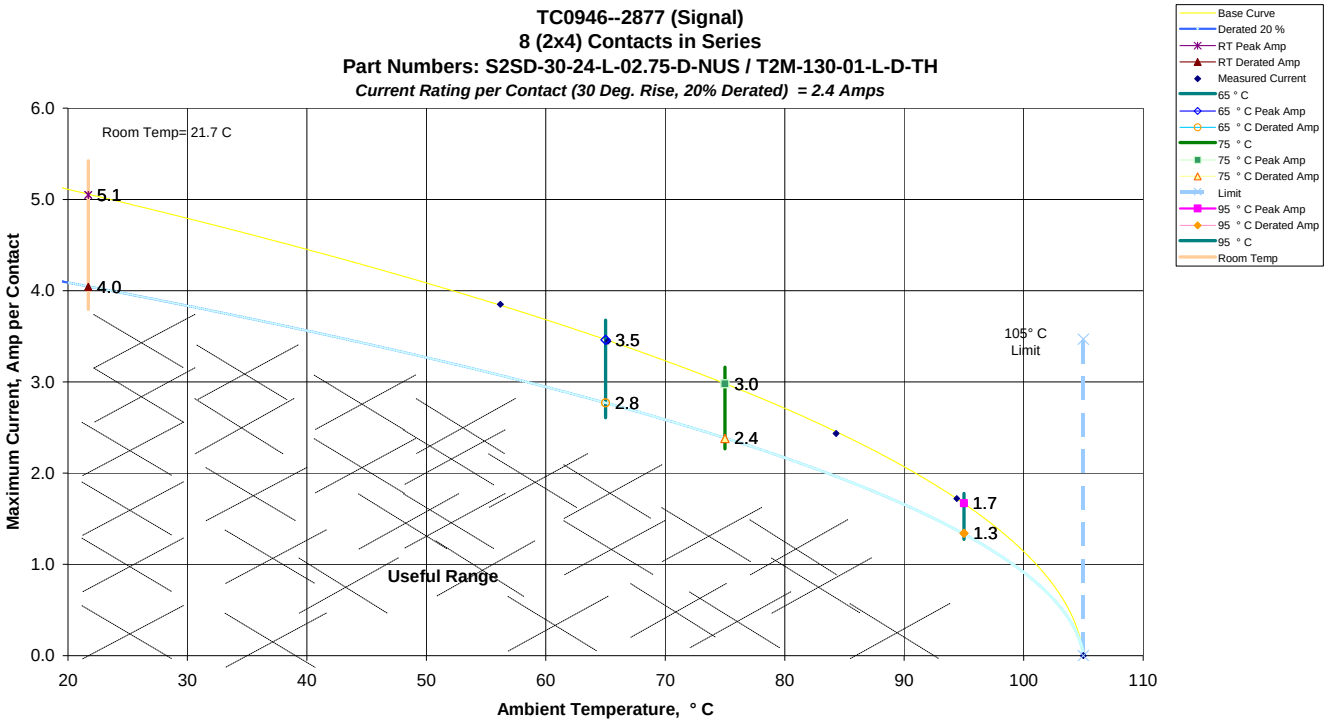
b. Linear configuration with 4 adjacent conductors/contacts powered



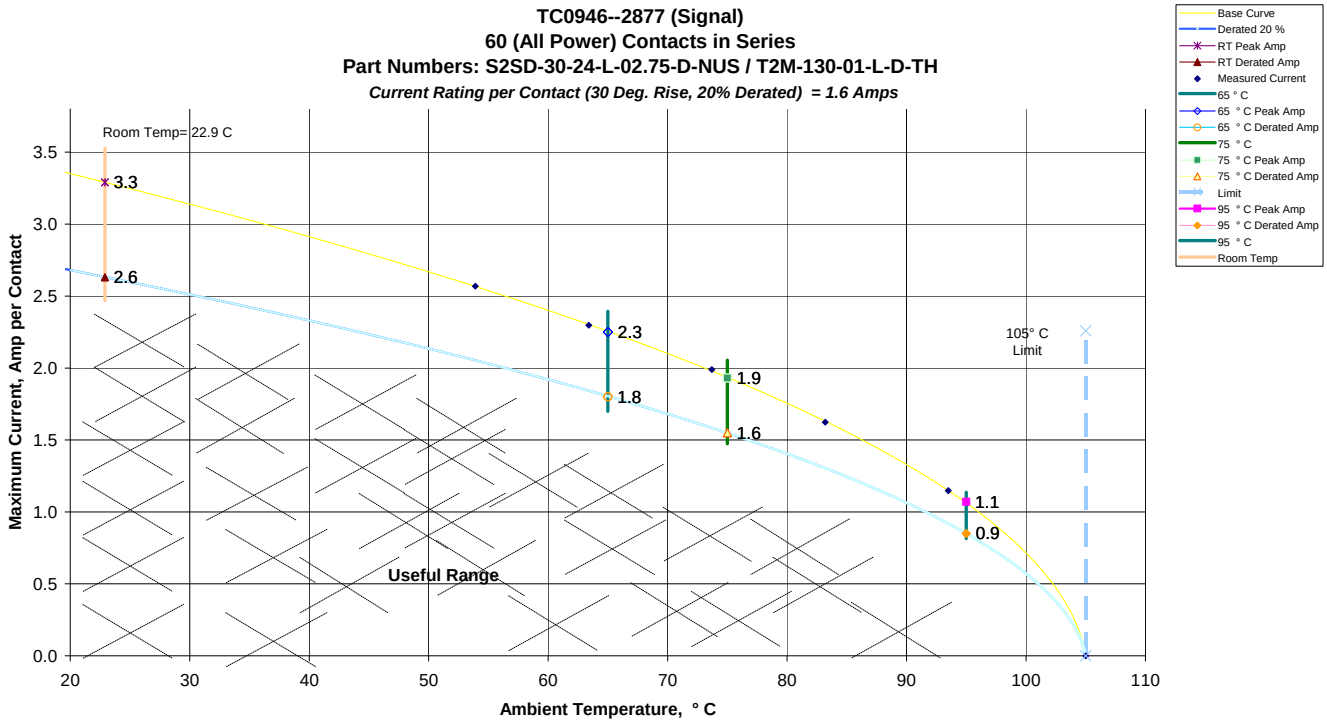
c. Linear configuration with 6 adjacent conductors/contacts powered



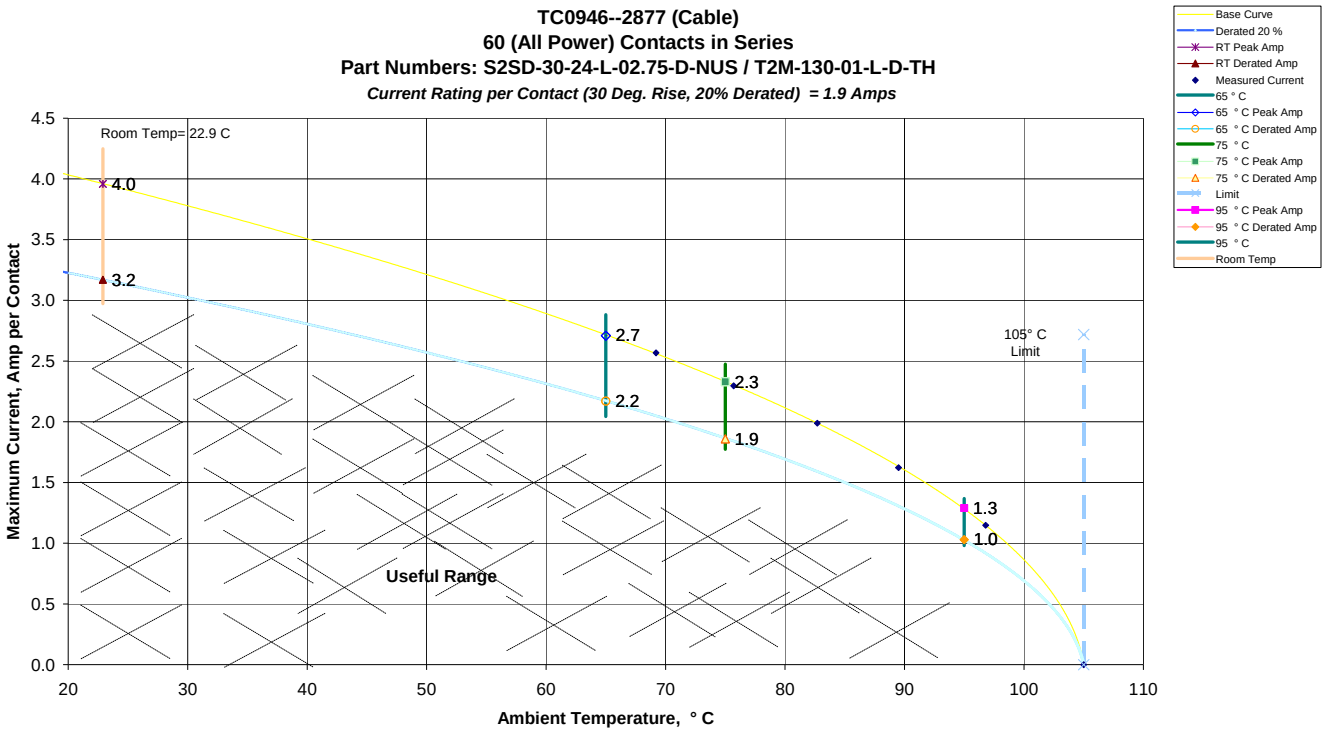
d. Linear configuration with 8 adjacent conductors/contacts powered



e. Linear configuration with all adjacent conductors/contacts powered (contact)



f. Linear configuration with all adjacent conductors/contacts powered (cable)



CONTACT GAPS (X-Axis):

Initial		After 100 Cycles		After Thermal	
Units:	mm	Units:	mm	Units:	mm
Minimum	0.2660	***Minimum***	0.2800	***Minimum***	0.3020
Maximum	0.3280	***Maximum***	0.4700	***Maximum***	0.4780
Average	0.2894	***Average***	0.3347	***Average***	0.3640
St. Dev.	0.0093	***St. Dev.***	0.0211	***St. Dev.***	0.0246
Count	180	***Count***	180	***Count***	180

CONTACT GAPS (Y-Axis):

Initial		After 100 Cycles		After Thermal	
Units:	mm	Units:	mm	Units:	mm
Minimum	0.3520	***Minimum***	0.3760	***Minimum***	0.3720
Maximum	0.4320	***Maximum***	0.4480	***Maximum***	0.4680
Average	0.3917	***Average***	0.4170	***Average***	0.4221
St. Dev.	0.0110	***St. Dev.***	0.0128	***St. Dev.***	0.0161
Count	180	***Count***	180	***Count***	180

MATING/UNMATING:

	Initial				After 25 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	45.50	10.23	35.27	7.93	38.83	8.73	32.56	7.32
Maximum	57.78	12.99	42.30	9.51	55.33	12.44	44.52	10.01
Average	52.21	**11.74**	38.70	**8.70**	47.42	**10.66**	38.05	**8.56**
St Dev	3.52	0.79	2.53	0.57	4.62	1.04	4.42	0.99
Count	10	10	10	10	10	10	10	10

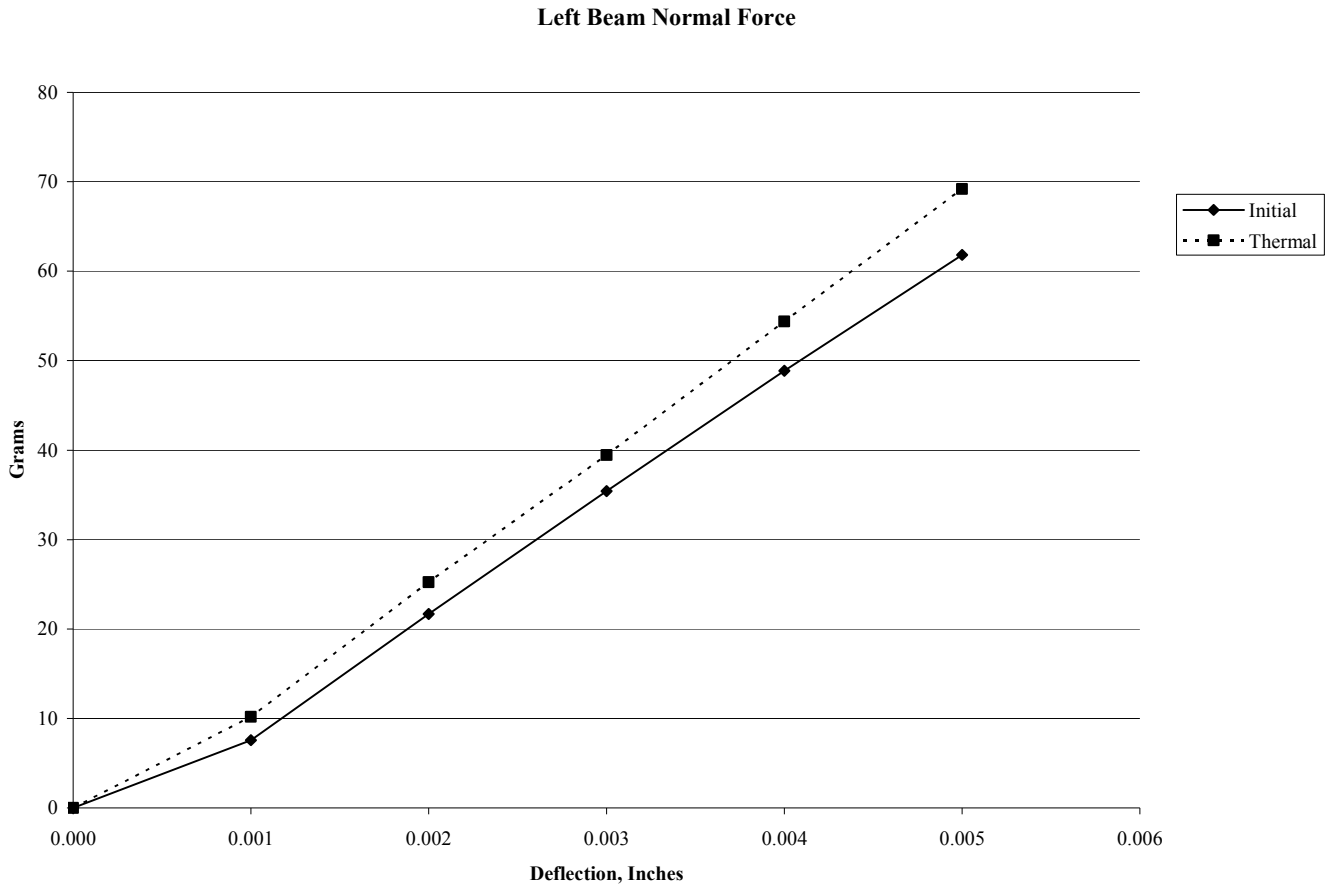
	After 50 Cycles				After 75 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	41.32	9.29	32.96	7.41	38.52	8.66	27.84	6.26
Maximum	56.71	12.75	51.29	11.53	57.74	12.98	53.55	12.04
Average	48.69	**10.95**	41.51	**9.33**	48.49	**10.90**	40.39	**9.08**
St Dev	4.41	0.99	5.45	1.22	5.79	1.30	8.78	1.97
Count	10	10	10	10	10	10	10	10

	After 100 Cycles				After Thermals			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	39.63	8.91	34.21	7.69	29.18	6.56	28.60	6.43
Maximum	54.22	12.19	52.09	11.71	38.88	8.74	35.81	8.05
Average	47.95	**10.78**	40.61	**9.13**	34.74	**7.81**	32.65	**7.34**
St Dev	4.58	1.03	5.96	1.34	3.36	0.76	2.74	0.62
Count	10	10	10	10	10	10	10	10

	After Humidity			
	Mating		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	28.47	6.40	26.55	5.97
Maximum	37.19	8.36	33.58	7.55
Average	33.15	**7.45**	30.63	**6.89**
St Dev	3.14	0.71	2.16	0.49
Count	10	10	10	10

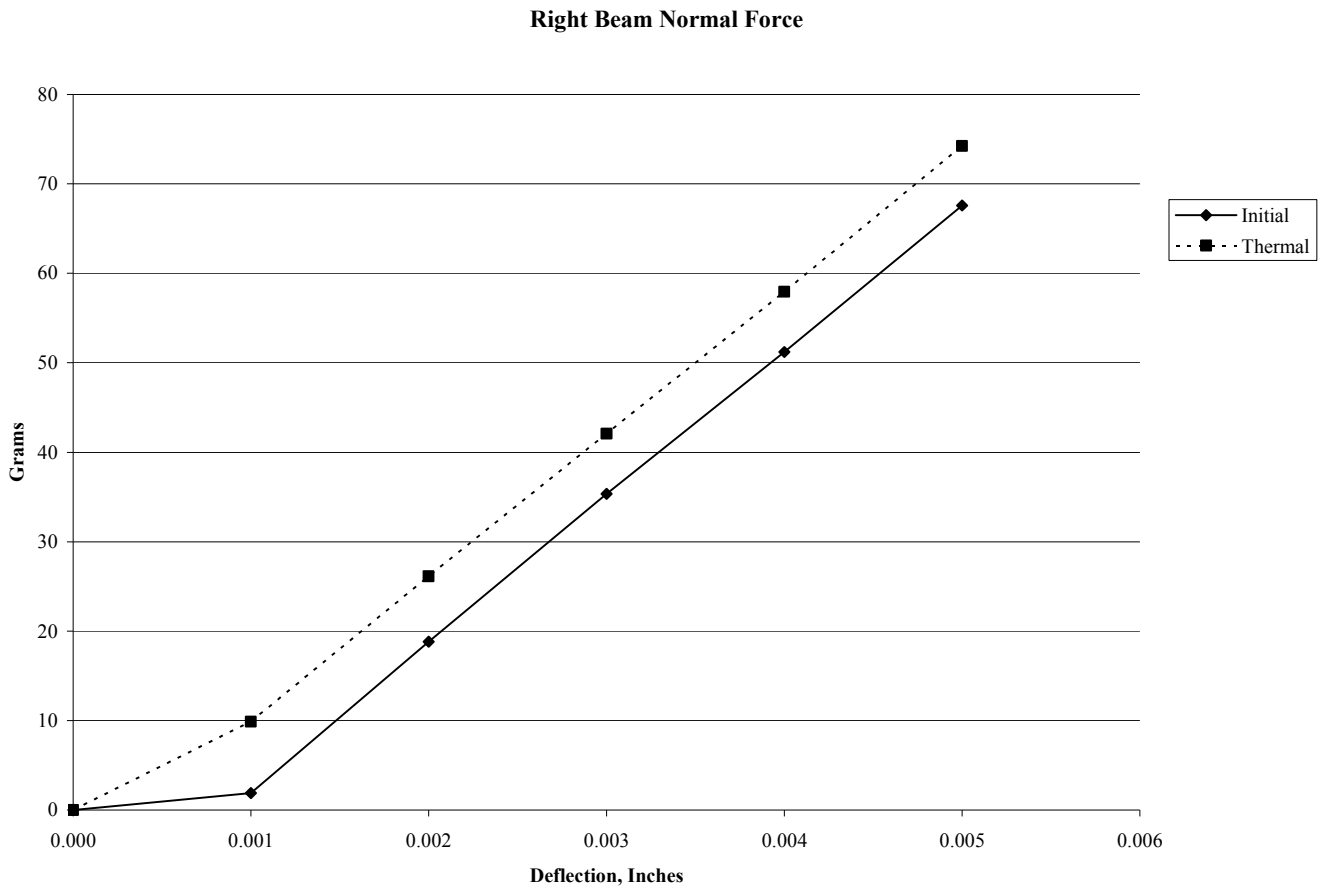
NORMAL FORCE (FOR CONTACTS TESTED OUTSIDE THE HOUSING):

1) Calibrated force gauges are used along with computer controlled positioning equipment.
2) A minimum of 5 readings are taken and the averages reported.



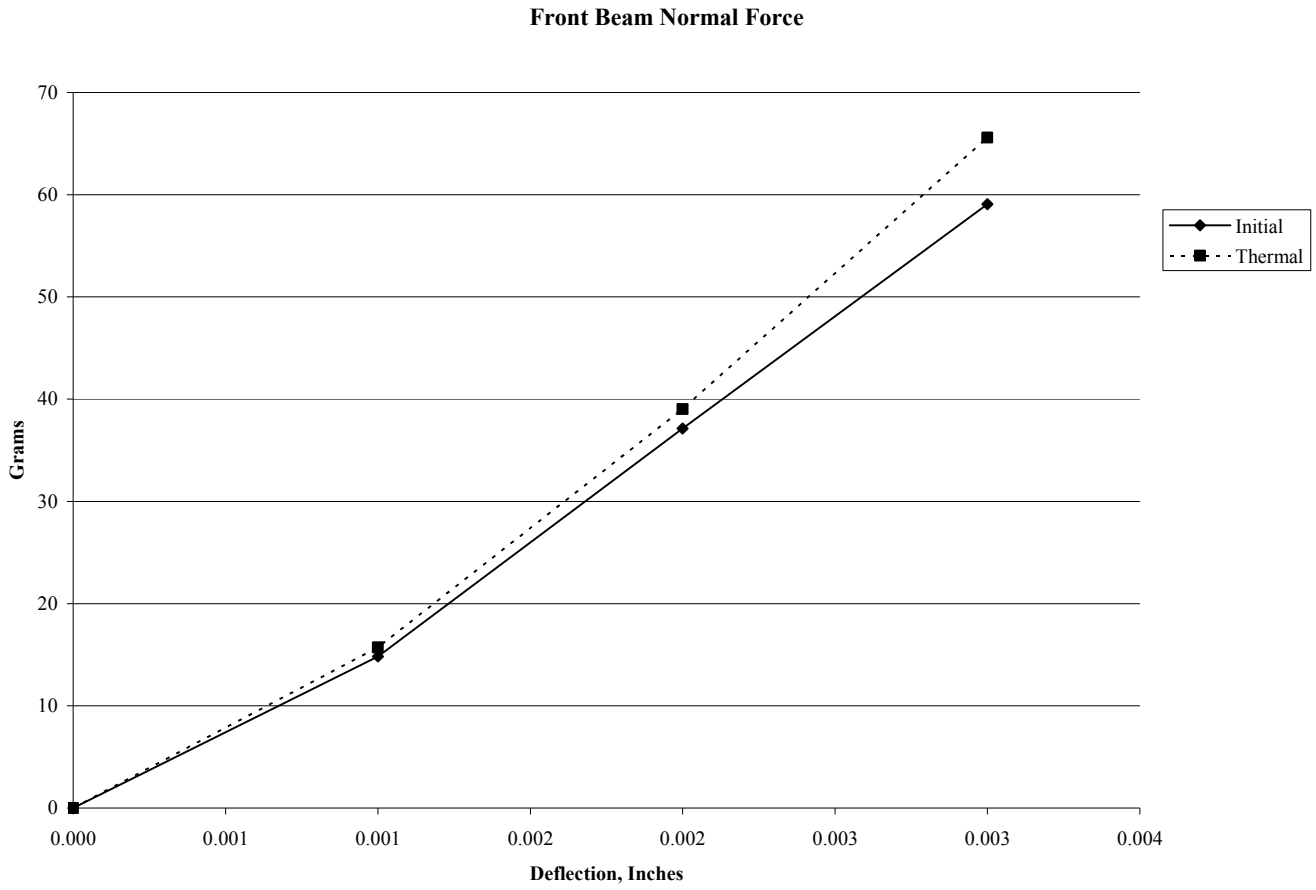
Initial	Deflections in inches Forces in Grams					
	0.001	**0.002**	**0.003**	**0.004**	**0.005**	**SET**
Averages	7.58	21.67	35.43	48.87	61.84	0.0005
Min	2.51	15.97	28.02	41.14	55.09	0.0002
Max	12.99	26.77	40.23	54.16	66.36	0.0007
St. Dev	3.87	4.05	5.07	5.30	4.59	0.0002
Count	5	5	5	5	5	5

Thermal	Deflections in inches, Forces in Grams					
	0.001	**0.002**	**0.003**	**0.004**	**0.005**	***SET***
Averages	10.18	25.24	39.44	54.39	69.19	0.0003
Min	6.76	23.10	35.50	48.83	60.29	0.0001
Max	14.46	29.11	43.95	57.66	76.63	0.0006
St. Dev	2.80	2.70	3.30	3.55	5.88	0.0002
Count	5	5	5	5	5	5



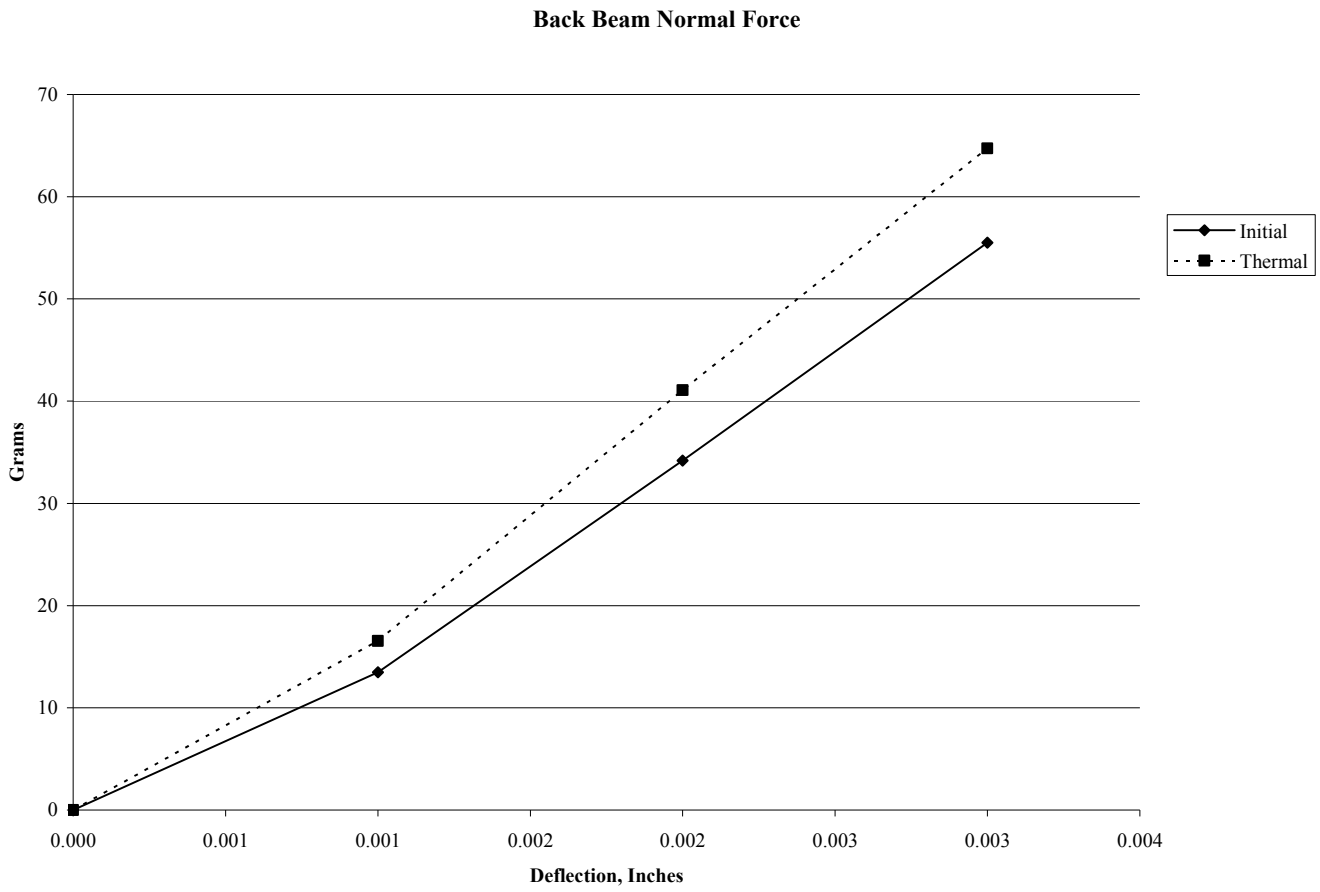
Initial	Deflections in inches Forces in Grams					
	0.001	**0.002**	**0.003**	**0.004**	**0.005**	**SET**
Averages	1.91	18.81	35.34	51.21	67.58	0.0009
Min	0.79	16.59	33.18	49.46	65.42	0.0008
Max	3.45	21.29	38.35	54.47	72.15	0.0010
St. Dev	1.10	1.70	1.87	2.03	2.64	0.0001
Count	5	5	5	5	5	5

Thermal	Deflections in inches, Forces in Grams					
	0.001	**0.002**	**0.003**	**0.004**	**0.005**	***SET***
Averages	9.90	26.13	42.07	57.94	74.24	0.0003
Min	6.39	23.29	37.94	54.28	69.68	0.0002
Max	12.30	27.70	44.33	60.48	77.94	0.0005
St. Dev	2.19	1.68	2.61	2.86	3.85	0.0001
Count	5	5	5	5	5	5



Initial	Deflections in inches Forces in Grams			
	0.001	**0.002**	**0.003**	**SET**
Averages	14.83	37.12	59.07	0.0003
Min	12.57	34.33	52.59	0.0002
Max	17.53	39.74	62.96	0.0004
St. Dev	1.78	2.09	4.43	0.0001
Count	5	5	5	5

Thermal	Deflections in inches, Forces in Grams			
	0.001	**0.002**	**0.003**	***SET***
Averages	15.72	39.02	65.58	0.0002
Min	11.70	34.80	61.60	0.0001
Max	20.60	43.80	70.70	0.0003
St. Dev	4.16	4.24	4.05	0.0001
Count	5	5	5	5



Initial	Deflections in inches Forces in Grams			
	0.001	**0.002**	**0.003**	**SET**
Averages	13.47	34.18	55.51	0.0004
Min	10.67	30.53	52.15	0.0001
Max	20.02	40.61	60.77	0.0006
St. Dev	3.75	3.86	3.33	0.0002
Count	5	5	5	5

Thermal	Deflections in inches, Forces in Grams			
	0.001	**0.002**	**0.003**	***SET***
Averages	16.54	41.08	64.72	0.0002
Min	12.70	38.20	60.50	0.0001
Max	20.60	45.90	70.30	0.0003
St. Dev	2.94	2.87	3.99	0.0001
Count	5	5	5	5

INSULATION RESISTANCE (IR):

	Pin to Pin		
	Mated	Unmated	Unmated
Minimum	**S2SD/T2M**	**S2SD**	**T2M**
Initial	100000	100000	100000
Thermal	100000	100000	100000
Humidity	100000	100000	100000

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

Voltage Rating Summary	
Minimum	**S2SD/T2M**
Break Down Voltage	1000
Test Voltage	750
Working Voltage	250

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

LLCR (50 Cycles):

1) A total of 219 points were measured.
    a. Part 4, Position 13 was deleted due to contact damage during assembly
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

Date	12/23/2009	12/23/2009	1/5/2010	1/19/2010
Room Temp C	22	22	22	22
RH	29%	28%	20%	25%
Name	Rodney Riley	Rodney Riley	Rodney Riley	Rodney Riley
mOhm values	**Actual Initial**	**Delta 50 Cycles**	**Delta Thermal**	**Delta Humidity**
Average	11.1	0.1	0.2	0.8
St. Dev.	0.2	0.1	0.3	1.1
Min	9.8	-0.6	-0.6	0.0
Max	12.1	0.6	2.4	7.2
Count	219	219	219	219

LLCR (100 Cycles):

1) A total of 220 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

Date	12/23/2009	12/23/2009	1/5/2010	1/19/2010
Room Temp C	22	22	21	22
RH	29%	29%	21%	25%
Name	Rodney Riley	Rodney Riley	Rodney Riley	Rodney Riley
mOhm values	**Actual Initial**	**Delta 100 Cycles**	**Delta Thermal**	**Delta Humidity**
Average	11.2	0.0	0.1	0.5
St. Dev.	0.3	0.2	0.3	0.6
Min	10.7	-1.0	-1.2	-1.1
Max	12.5	0.7	2.5	4.8
Count	220	220	220	220

GAS TIGHT:

1) A total of 176 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

Date	12/28/2009	12/29/2009
Room Temp C	20	20
RH	27%	20%
Name	Rodney Riley	Rodney Riley
mOhm values	**Actual Initial**	**Delta Gas Tight**
Average	11.2	0.1
St. Dev.	0.6	0.4
Min	10.6	-4.4
Max	16.8	0.7
Count	176	176

DATA

CONTACT GAPS (X-Axis):

Initial						
Units: mm						
Pos.#	B1	B2	B3	B4	B5	B6
1	0.2860	0.2780	0.2940	0.2980	0.3000	0.2900
2	0.2800	0.2880	0.2880	0.2860	0.2820	0.2900
3	0.2780	0.2860	0.2940	0.2860	0.2720	0.2900
4	0.2760	0.2900	0.2860	0.2880	0.3080	0.2840
5	0.2840	0.2920	0.2960	0.2900	0.2900	0.2820
6	0.2760	0.2800	0.2840	0.2880	0.2820	0.2780
7	0.2800	0.2880	0.2920	0.3060	0.2940	0.2980
8	0.2880	0.2880	0.2900	0.2860	0.2840	0.2980
9	0.2820	0.2880	0.2960	0.3120	0.2820	0.2960
10	0.2840	0.2860	0.2920	0.2900	0.2900	0.2700
11	0.3000	0.2840	0.2880	0.3040	0.2820	0.2920
12	0.2800	0.2860	0.2880	0.3040	0.2860	0.2880
13	0.3240	0.2840	0.2800	0.2900	0.2800	0.2800
14	0.3080	0.2920	0.2900	0.2880	0.2980	0.2860
15	0.3140	0.2960	0.2960	0.2840	0.2780	0.2740
16	0.2880	0.2880	0.2900	0.2980	0.2780	0.2880
17	0.2820	0.2800	0.2840	0.2840	0.3060	0.2940
18	0.2840	0.2660	0.2940	0.2900	0.2940	0.2860
19	0.2840	0.2880	0.2880	0.2900	0.2960	0.3020
20	0.2820	0.2940	0.2920	0.2740	0.2860	0.2980
21	0.2820	0.2980	0.2880	0.2820	0.2860	0.2800
22	0.2800	0.2860	0.2880	0.3060	0.2820	0.2820
23	0.2840	0.2840	0.2960	0.2860	0.3020	0.2800
24	0.2920	0.2800	0.2960	0.2960	0.3000	0.2900
25	0.2840	0.2920	0.2940	0.2860	0.2980	0.2880
26	0.2880	0.2960	0.2980	0.3100	0.2820	0.2860
27	0.2920	0.2760	0.2980	0.2840	0.2920	0.2900
28	0.2860	0.2880	0.3000	0.2820	0.2900	0.2780
29	0.3280	0.2840	0.2860	0.2840	0.2960	0.2900
30	0.3080	0.2960	0.2820	0.3180	0.2860	0.2940

After 100 Cycles						
Units: mm						
Pos.#	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**
1	0.3660	0.3580	0.3260	0.3380	0.3260	0.3360
2	0.3460	0.3300	0.3380	0.3300	0.3120	0.3280
3	0.3240	0.3280	0.3400	0.3240	0.3340	0.3360
4	0.3240	0.3400	0.3340	0.3320	0.3320	0.2940
5	0.3340	0.3280	0.3080	0.3320	0.3300	0.3340
6	0.3280	0.3160	0.3300	0.3340	0.3180	0.3380
7	0.3360	0.3360	0.3500	0.3280	0.3380	0.3380
8	0.3260	0.3260	0.3360	0.3320	0.3280	0.3500
9	0.3380	0.3300	0.3480	0.3360	0.3340	0.3400
10	0.3380	0.3320	0.3360	0.3280	0.3160	0.3280
11	0.3480	0.3220	0.3400	0.3180	0.3040	0.3340
12	0.3400	0.3300	0.4700	0.3340	0.3380	0.2880
13	0.3560	0.3320	0.4520	0.3340	0.3320	0.3400
14	0.3280	0.3280	0.3460	0.3200	0.3340	0.3340
15	0.3460	0.3280	0.3300	0.3280	0.3280	0.2800
16	0.3220	0.3140	0.3280	0.3420	0.3180	0.3360
17	0.3340	0.3240	0.3100	0.3260	0.3180	0.3540
18	0.3320	0.3220	0.3380	0.3340	0.3300	0.3440
19	0.3380	0.3400	0.3200	0.3240	0.3100	0.3540
20	0.3340	0.3340	0.3240	0.3200	0.3320	0.3500
21	0.3340	0.3380	0.3340	0.3340	0.3100	0.3120
22	0.3340	0.3280	0.3260	0.3360	0.3140	0.3440
23	0.3380	0.3420	0.3260	0.3260	0.3200	0.3300
24	0.3420	0.3280	0.3320	0.3380	0.3220	0.3400
25	0.3340	0.3220	0.3380	0.3420	0.3360	0.3240
26	0.3320	0.3320	0.3020	0.3040	0.3180	0.3620
27	0.3260	0.3220	0.3480	0.3340	0.3260	0.3440
28	0.3420	0.3600	0.3520	0.3200	0.3340	0.3260
29	0.4100	0.3720	0.3440	0.3680	0.3400	0.3280
30	0.3480	0.3520	0.4160	0.4000	0.3320	0.3480

After Thermal						
Units: mm						
Pos.#	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**
1	0.4320	0.4420	0.3600	0.4780	0.3640	0.3640
2	0.4200	0.4240	0.3540	0.4480	0.3400	0.3580
3	0.3760	0.3680	0.3240	0.3620	0.3780	0.3600
4	0.3900	0.3640	0.3440	0.3680	0.3520	0.3640
5	0.3700	0.3460	0.3660	0.3500	0.3660	0.3440
6	0.3640	0.3720	0.3660	0.3880	0.3680	0.3780
7	0.3600	0.3640	0.3520	0.3740	0.3700	0.3680
8	0.3680	0.3740	0.3580	0.3480	0.3640	0.3720
9	0.3720	0.3960	0.3420	0.3580	0.3680	0.3560
10	0.3640	0.3700	0.3540	0.3620	0.3560	0.3560
11	0.3760	0.3480	0.3860	0.3740	0.3620	0.3460
12	0.3600	0.3560	0.3440	0.3840	0.3420	0.3400
13	0.3660	0.3560	0.3580	0.3660	0.3420	0.3600
14	0.3560	0.3660	0.3600	0.3500	0.3500	0.3440
15	0.3480	0.3540	0.3320	0.3400	0.3540	0.3520
16	0.3380	0.3700	0.3440	0.3560	0.3440	0.3780
17	0.3700	0.3700	0.3820	0.3700	0.3140	0.3340
18	0.3480	0.3600	0.3480	0.3720	0.3340	0.3620
19	0.3560	0.3480	0.3700	0.3600	0.3440	0.3520
20	0.3600	0.3440	0.3380	0.3680	0.3620	0.3620
21	0.3700	0.3340	0.3280	0.3600	0.3400	0.3500
22	0.3580	0.3820	0.3700	0.3780	0.3620	0.3560
23	0.3620	0.3380	0.3480	0.3680	0.3540	0.3500
24	0.3600	0.3800	0.3580	0.3680	0.3640	0.3580
25	0.3560	0.3880	0.3020	0.3760	0.3360	0.3420
26	0.3680	0.3340	0.3580	0.4100	0.3700	0.4340
27	0.3680	0.3460	0.3580	0.3620	0.3180	0.3840
28	0.3880	0.3480	0.3580	0.3800	0.3420	0.3640
29	0.4040	0.3480	0.3700	0.3920	0.3440	0.4440
30	0.3920	0.4560	0.3780	0.3740	0.3440	0.4220

CONTACT GAPS (Y-Axis):

Initial						
Units: mm						
Pos.#	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**
1	0.4040	0.4240	0.3880	0.4060	0.3800	0.3800
2	0.3980	0.3800	0.3960	0.3800	0.3940	0.4000
3	0.3820	0.3860	0.3860	0.4000	0.3860	0.4000
4	0.3880	0.3840	0.4020	0.3860	0.3960	0.3720
5	0.3960	0.3880	0.3920	0.3820	0.3880	0.3840
6	0.3980	0.3820	0.3920	0.3860	0.3980	0.3900
7	0.3920	0.4020	0.3540	0.3900	0.3920	0.3960
8	0.3920	0.3880	0.3940	0.3880	0.4060	0.3900
9	0.3940	0.3880	0.3900	0.3920	0.3900	0.3840
10	0.3620	0.3860	0.4100	0.3940	0.3960	0.4100
11	0.3520	0.3860	0.3960	0.3780	0.3800	0.3880
12	0.4040	0.3900	0.3880	0.3880	0.3960	0.3840
13	0.4180	0.3880	0.3960	0.3980	0.3920	0.3940
14	0.3980	0.3880	0.3920	0.4000	0.4020	0.3860
15	0.3520	0.3760	0.3880	0.4020	0.4220	0.3780
16	0.3920	0.3960	0.4000	0.3840	0.3960	0.3840
17	0.4320	0.3940	0.3900	0.3820	0.3980	0.4100
18	0.3980	0.4220	0.3780	0.3880	0.3900	0.3720
19	0.3940	0.3840	0.3920	0.3880	0.3960	0.3920
20	0.4000	0.3920	0.3920	0.3880	0.3940	0.4140
21	0.4020	0.4020	0.3880	0.3960	0.3920	0.4140
22	0.3840	0.4000	0.4000	0.3880	0.3800	0.3880
23	0.4000	0.4000	0.4120	0.3880	0.3940	0.3920
24	0.3760	0.3780	0.3960	0.3920	0.3980	0.4000
25	0.3940	0.3900	0.3880	0.3700	0.3900	0.3900
26	0.3980	0.3920	0.4000	0.3960	0.3860	0.3800
27	0.3920	0.3860	0.3900	0.3760	0.4000	0.4000
28	0.4040	0.3920	0.3880	0.3980	0.3920	0.3880
29	0.3920	0.3920	0.3980	0.3880	0.3940	0.3900
30	0.3840	0.3840	0.3900	0.3980	0.3880	0.3880

After 100 Cycles						
Units: mm						
Pos.#	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**
1	0.4360	0.4060	0.4240	0.4180	0.4200	0.4080
2	0.4220	0.4100	0.4140	0.4020	0.4240	0.4100
3	0.4180	0.4300	0.4200	0.4480	0.4200	0.4320
4	0.4280	0.4080	0.4080	0.4100	0.4180	0.4300
5	0.4340	0.4260	0.4220	0.4160	0.4000	0.4240
6	0.4260	0.4080	0.4140	0.4240	0.4180	0.4480
7	0.4160	0.4140	0.4100	0.4160	0.4100	0.4200
8	0.4060	0.4160	0.4200	0.4280	0.4120	0.4340
9	0.4000	0.4200	0.4240	0.4160	0.4200	0.4340
10	0.4300	0.4080	0.4400	0.4100	0.4080	0.4340
11	0.4020	0.4080	0.4100	0.4380	0.3760	0.4420
12	0.4300	0.4000	0.4060	0.4160	0.4100	0.4360
13	0.4320	0.4200	0.4320	0.4320	0.4240	0.4160
14	0.4300	0.4020	0.3980	0.4160	0.4140	0.4160
15	0.3980	0.4200	0.4060	0.4140	0.4040	0.4120
16	0.4180	0.4240	0.4100	0.4120	0.4080	0.4380
17	0.4120	0.4320	0.3920	0.4200	0.4040	0.4320
18	0.4020	0.4120	0.4080	0.4080	0.4100	0.4280
19	0.4120	0.4160	0.4100	0.4460	0.4100	0.4360
20	0.4120	0.3940	0.3900	0.4080	0.4200	0.4100
21	0.4160	0.4180	0.4020	0.4220	0.4280	0.4240
22	0.4140	0.4040	0.4040	0.4100	0.3960	0.4380
23	0.4260	0.4100	0.3980	0.4080	0.4100	0.4320
24	0.4260	0.4100	0.4100	0.3760	0.4000	0.4260
25	0.4140	0.4160	0.4240	0.4100	0.3940	0.4100
26	0.4200	0.4060	0.4260	0.4340	0.4160	0.4340
27	0.4080	0.4240	0.4360	0.4340	0.4140	0.4180
28	0.4340	0.4100	0.4340	0.4040	0.4080	0.4240
29	0.4340	0.4180	0.4180	0.4200	0.4240	0.4460
30	0.4060	0.4140	0.4160	0.4400	0.3940	0.4140

After Thermal						
Units: mm						
Pos.#	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**
1	0.4160	0.4280	0.4180	0.4680	0.4160	0.4400
2	0.4060	0.4020	0.4160	0.4260	0.4040	0.4460
3	0.4500	0.4460	0.4260	0.4340	0.4260	0.4220
4	0.4320	0.4340	0.4180	0.4340	0.4580	0.4300
5	0.4400	0.4260	0.4220	0.4180	0.4480	0.4420
6	0.4120	0.4480	0.4180	0.4400	0.4220	0.4380
7	0.4060	0.4360	0.4280	0.4380	0.4120	0.4580
8	0.4240	0.4440	0.4120	0.4340	0.4160	0.4300
9	0.4320	0.4160	0.4000	0.4160	0.4340	0.4300
10	0.4160	0.4360	0.4280	0.4340	0.4420	0.4300
11	0.3760	0.4140	0.4240	0.4180	0.4280	0.4260
12	0.4280	0.4220	0.4020	0.4280	0.4240	0.4360
13	0.3800	0.4300	0.4240	0.4100	0.4140	0.4300
14	0.4400	0.4260	0.4220	0.4380	0.4460	0.4100
15	0.4180	0.4400	0.4240	0.4140	0.4140	0.4040
16	0.4060	0.4320	0.4100	0.4120	0.4220	0.4420
17	0.4220	0.3900	0.4140	0.4160	0.4200	0.4300
18	0.4460	0.4200	0.4120	0.4380	0.4220	0.4280
19	0.4220	0.4020	0.4240	0.4220	0.4100	0.4220
20	0.4200	0.4300	0.4100	0.4240	0.4440	0.4280
21	0.4300	0.4280	0.4260	0.3780	0.4260	0.4340
22	0.4160	0.4160	0.4140	0.4000	0.4080	0.4040
23	0.4240	0.3720	0.4200	0.3860	0.4140	0.4280
24	0.3840	0.4180	0.4160	0.4060	0.4360	0.4040
25	0.4160	0.4200	0.4340	0.3900	0.4320	0.4260
26	0.4280	0.3900	0.4180	0.3920	0.4080	0.4400
27	0.4380	0.3920	0.4140	0.3880	0.4160	0.4280
28	0.4200	0.4120	0.4180	0.4320	0.4260	0.4280
29	0.4280	0.4440	0.4140	0.4120	0.4180	0.4280
30	0.4140	0.4320	0.4480	0.3940	0.4240	0.4560

MATING/UNMATING:

	Initial		After 25 Cycles		After 50 Cycles		After 75 Cycles		After 100 Cycles		After Thermals		After Humidity	
Sample#	Mating	Unmating	Mating	Unmating	Mating	Unmating	Mating	Unmating	Mating	Unmating	Mating	Unmating	Mating	Unmating
1	10.23	7.93	9.38	7.63	10.03	8.37	8.66	6.46	9.63	7.90	6.63	6.43	6.40	5.97
2	11.85	8.54	10.82	9.21	11.15	10.42	11.18	10.62	11.73	11.71	7.72	6.94	6.88	6.71
3	11.11	8.30	8.73	7.32	9.29	8.41	9.13	7.92	8.91	7.69	6.56	6.45	6.63	6.39
4	12.99	9.51	10.98	7.84	11.53	8.96	11.75	9.31	11.43	9.33	8.74	7.96	7.87	7.00
5	11.45	9.45	11.07	9.62	10.22	7.41	10.22	7.41	10.33	8.27	7.75	7.09	7.99	6.58
6	11.89	7.96	11.34	9.12	11.70	9.84	11.90	10.36	12.19	10.86	7.68	7.70	7.72	7.07
7	12.79	9.06	12.44	10.01	12.75	11.53	12.98	12.04	11.35	8.65	8.20	7.74	6.75	7.34
8	11.50	9.14	10.32	7.72	10.39	9.05	10.83	9.63	10.01	7.94	7.72	7.11	7.92	6.89
9	11.54	8.56	10.37	7.73	11.00	8.86	10.78	6.26	11.30	9.13	8.68	7.93	8.36	7.55
10	12.03	8.56	11.15	9.35	11.40	10.48	11.59	10.80	10.93	9.83	8.42	8.05	8.00	7.36

NORMAL FORCE (FOR CONTACTS TESTED OUTSIDE THE HOUSING):

Left Beam:

Initial	Deflections in inches Forces in Grams					
Sample #	**0.001**	**0.002**	**0.003**	**0.004**	**0.005**	***SET***
1	5.64	19.91	33.62	48.27	60.66	0.00060
2	12.99	26.77	40.07	54.16	66.36	0.00020
3	8.45	22.07	35.22	47.27	61.20	0.00040
4	8.30	23.64	40.23	53.53	65.89	0.00040
5	2.51	15.97	28.02	41.14	55.09	0.00070

Thermal	Deflections in inches Forces in Grams					
Sample #	**0.001**	**0.002**	**0.003**	**0.004**	**0.005**	***SET***
1	10.71	27.05	40.57	55.03	69.87	0.00020
2	14.46	29.11	43.95	57.10	70.81	0.00010
3	9.77	23.67	37.00	53.34	68.37	0.00020
4	9.20	23.29	35.50	48.83	60.29	0.00020
5	6.76	23.10	40.19	57.66	76.63	0.00060

Right Beam:

Initial	Deflections in inches Forces in Grams					
Sample #	**0.001**	**0.002**	**0.003**	**0.004**	**0.005**	***SET***
1	1.41	21.29	38.35	54.47	72.15	0.00080
2	3.45	18.63	35.06	50.56	66.36	0.00080
3	1.25	18.31	34.90	49.77	66.68	0.00100
4	2.66	19.25	35.22	51.81	67.30	0.00090
5	0.79	16.59	33.18	49.46	65.42	0.00090

Thermal	Deflections in inches Forces in Grams					
Sample #	**0.001**	**0.002**	**0.003**	**0.004**	**0.005**	***SET***
1	12.30	27.70	41.10	55.50	70.50	0.00020
2	10.52	26.86	44.33	60.48	76.82	0.00030
3	9.58	26.11	43.20	59.16	76.25	0.00040
4	6.39	23.29	37.94	54.28	69.68	0.00050
5	10.71	26.67	43.76	60.29	77.94	0.00030

Front Beam:

Initial	Deflections in inches Forces in Grams			
Sample #	**0.001**	**0.002**	**0.003**	***SET***
1	14.56	35.84	56.50	0.00030
2	14.46	38.13	60.77	0.00040
3	12.57	34.33	52.59	0.00040
4	15.05	37.54	62.52	0.00030
5	17.53	39.74	62.96	0.00020

Thermal	Deflections in inches Forces in Grams			
Sample #	**0.001**	**0.002**	**0.003**	***SET***
1	19.60	43.20	70.70	0.00010
2	20.60	43.80	68.90	0.00020
3	11.70	35.50	61.60	0.00030
4	12.10	34.80	62.20	0.00030
5	14.60	37.80	64.50	0.00010

Back Beam:

Initial	Deflections in inches Forces in Grams			
Sample #	**0.001**	**0.002**	**0.003**	***SET***
1	10.67	30.53	52.15	0.00060
2	20.02	40.61	60.77	0.00010
3	12.86	33.31	56.24	0.00040
4	11.54	32.14	53.32	0.00050
5	12.27	34.33	55.07	0.00040

Thermal	Deflections in inches Forces in Grams			
Sample #	**0.001**	**0.002**	**0.003**	***SET***
1	15.00	40.30	65.10	0.00020
2	17.30	40.30	60.50	0.00020
3	17.10	40.70	61.30	0.00010
4	20.60	45.90	70.30	0.00030
5	12.70	38.20	66.40	0.00030

INSULATION RESISTANCE (IR):

Initial Insulation Resistance
Measured In Meg Ohms

	Pin to Pin		
	Mated	Unmated	
	X	X	X
Sample#	S2SD/T2M	S2SD	T2M
1	100,000	100,000	100,000
2	100,000	100,000	100,000

Thermal Insulation Resistance
Measured In Meg Ohms

	Pin to Pin		
	Mated	Unmated	
	x	x	x
Sample#	S2SD/T2M	S2SD	T2M
1	100,000	100,000	100,000
2	100,000	100,000	100,000

Humidity Insulation Resistance
Measured In Meg Ohms

	Pin to Pin		
	Mated	Unmated	
	x	x	x
Sample#	S2SD/T2M	S2SD	T2M
1	100,000	100,000	100,000
2	100,000	100,000	100,000

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

Initial DWV
Test Voltage= 750

	Pin to Pin		
	Mated	Unmated	
Sample#	S2SD/T2M	S2SD	T2M
1	750	750	750
2	750	750	750

Thermal Test Voltage
Test Voltage= 750

	Pin to Pin		
	Mated	Unmated	
Sample#	S2SD/T2M	S2SD	T2M
1	750	750	750
2	750	750	750

Humidity Test Voltage
Test Voltage= 750

	Pin to Pin		
	Mated	Unmated	
Sample#	S2SD/T2M	S2SD	T2M
1	750	750	750
2	750	750	750

LLCR (50 Cycles):

Board	mOhm values Position	Actual Initial	Delta 50 Cycles	Delta Thermal	Delta Humidity
1	P1	11.4	-0.2	0.3	1.7
1	P2	11.0	0.1	0.4	0.4
1	P3	11.4	0.0	0.6	2.1
1	P4	11.2	0.1	0.2	0.3
1	P5	11.3	0.4	0.8	0.8
1	P7	11.8	-0.4	-0.3	0.6
1	P8	11.3	0.0	0.4	0.3
1	P9	11.1	0.0	0.3	0.3
1	P10	11.6	-0.1	0.0	0.9
1	P11	11.1	0.0	0.3	0.3
1	P12	11.5	-0.2	1.9	1.4
1	P13	11.5	-0.2	1.7	6.4
1	P14	11.2	-0.2	0.4	0.6
1	P15	11.0	-0.2	0.3	0.3
1	P16	10.9	-0.1	0.2	0.1
1	P17	11.0	-0.2	0.2	0.3
1	P18	11.1	-0.3	0.2	0.0
1	P19	10.8	0.1	0.3	0.5
1	P20	11.5	-0.4	0.0	0.8
1	P21	11.1	0.0	0.4	1.5
1	P23	11.0	0.2	0.3	2.2
1	P24	11.1	-0.1	0.4	2.9
2	P1	11.5	0.4	0.9	1.6
2	P2	11.2	0.3	0.3	0.3
2	P3	11.2	0.1	0.3	0.4
2	P4	11.2	0.0	0.1	0.5
2	P5	11.3	0.2	0.3	0.1
2	P7	11.2	0.1	0.1	0.8
2	P8	11.5	0.1	0.2	0.3
2	P9	11.2	0.1	0.3	0.8
2	P10	11.1	0.2	0.2	0.2
2	P11	11.0	0.3	0.5	0.6
2	P12	11.2	0.0	0.1	0.5
2	P13	11.1	0.1	0.2	1.1
2	P14	11.1	-0.1	0.2	0.8
2	P15	11.0	-0.1	0.4	0.6
2	P16	10.9	0.0	0.1	0.2
2	P17	11.1	0.2	0.7	0.7
2	P18	11.1	0.2	0.9	0.4
2	P19	10.9	0.3	0.7	0.6
2	P20	11.0	0.1	0.3	0.3
2	P21	10.9	0.2	0.3	0.6
2	P23	10.9	0.2	0.4	0.4

2	P24	10.8	0.2	0.4	0.8
3	P1	11.3	0.2	0.2	1.4
3	P2	11.1	0.1	0.1	0.4
3	P3	11.2	0.3	0.1	0.9
3	P4	11.5	0.4	0.3	0.3
3	P5	11.4	0.1	0.1	0.1
3	P7	11.3	0.3	0.4	0.3
3	P8	11.3	0.2	0.1	1.7
3	P9	11.1	0.2	0.1	0.3
3	P10	12.1	-0.6	-0.6	0.9
3	P11	11.2	0.0	0.0	0.6
3	P12	11.1	0.3	0.4	1.3
3	P13	11.4	0.2	0.3	0.7
3	P14	11.0	0.0	-0.1	0.4
3	P15	10.9	0.1	0.0	0.4
3	P16	11.2	0.1	0.2	0.2
3	P17	10.7	0.1	0.1	0.2
3	P18	10.7	0.1	0.1	0.2
3	P19	11.0	0.1	0.0	0.3
3	P20	11.0	0.2	-0.2	0.2
3	P21	10.8	0.3	0.4	0.8
3	P23	11.0	0.3	-0.1	1.6
3	P24	11.0	0.3	0.0	0.5
4	P1	11.2	0.0	0.0	0.1
4	P2	11.6	0.0	0.1	0.7
4	P3	11.5	-0.1	-0.2	0.4
4	P4	11.4	-0.1	0.0	0.2
4	P5	11.4	0.1	0.2	0.7
4	P7	11.3	0.1	0.2	2.5
4	P8	11.2	0.0	0.0	2.0
4	P9	11.3	0.0	0.0	1.0
4	P10	11.2	0.2	0.1	0.7
4	P11	11.2	0.2	0.1	0.6
4	P12	11.4	0.1	0.5	6.7
4	P14	11.0	0.1	0.1	0.2
4	P15	11.3	0.3	0.9	7.1
4	P16	10.8	0.2	0.3	0.3
4	P17	11.2	0.6	1.0	2.4
4	P18	11.1	0.3	0.4	1.9
4	P19	11.1	0.3	0.7	4.9
4	P20	11.2	0.2	0.1	0.2
4	P21	10.9	0.2	0.3	0.5
4	P23	11.1	0.0	0.1	0.5
4	P24	11.2	0.1	0.2	1.1
5	P1	11.1	0.2	0.3	0.4
5	P2	11.1	0.2	0.3	0.9
5	P3	11.2	-0.1	0.0	0.2
5	P4	10.9	0.1	0.2	0.3
5	P5	11.1	0.1	0.4	2.0

5	P7	10.9	0.1	0.4	0.2
5	P8	11.0	0.1	0.6	0.7
5	P9	11.0	0.2	0.3	0.5
5	P10	11.1	0.2	0.3	0.8
5	P11	11.1	0.3	0.3	0.2
5	P12	11.0	0.1	0.4	0.3
5	P13	11.1	0.1	0.3	2.5
5	P14	10.7	0.1	0.3	0.4
5	P15	11.0	0.1	0.3	4.2
5	P16	11.0	0.1	0.4	0.4
5	P17	11.1	0.0	0.4	0.5
5	P18	10.9	0.2	0.8	1.9
5	P19	10.8	0.1	0.3	0.3
5	P20	10.8	0.2	0.3	0.3
5	P21	10.9	0.2	0.5	0.7
5	P23	10.8	0.1	0.3	0.3
5	P24	10.6	0.2	0.6	0.3
6	P1	11.1	0.1	0.1	0.4
6	P2	11.1	0.0	0.0	1.3
6	P3	11.1	0.0	0.1	0.2
6	P4	11.3	0.0	0.2	0.9
6	P5	11.2	0.0	0.2	0.4
6	P7	11.1	-0.1	0.2	0.5
6	P8	11.1	-0.1	0.1	0.3
6	P9	10.8	0.1	0.1	0.4
6	P10	10.9	0.0	0.1	0.2
6	P11	11.0	0.0	0.0	0.3
6	P12	11.2	0.0	0.1	0.3
6	P13	10.9	0.0	0.1	0.4
6	P14	11.0	0.0	0.1	0.3
6	P15	10.8	-0.1	0.1	0.2
6	P16	10.8	0.0	0.0	0.2
6	P17	10.8	-0.1	-0.1	0.1
6	P18	10.8	0.1	0.0	0.2
6	P19	10.9	0.1	0.1	0.3
6	P20	11.2	0.1	0.3	1.2
6	P21	10.9	0.0	0.2	1.3
6	P23	11.0	0.1	0.3	0.3
6	P24	10.8	0.1	0.1	0.2
7	P1	11.0	0.1	0.0	0.9
7	P2	11.0	0.0	-0.1	0.2
7	P3	11.0	0.1	0.2	1.0
7	P4	11.0	0.1	0.0	0.5
7	P5	10.9	0.1	0.2	1.8
7	P7	11.1	0.0	0.0	0.6
7	P8	10.9	0.1	0.0	0.4
7	P9	11.2	0.1	0.1	3.4
7	P10	11.0	0.1	0.1	0.7
7	P11	10.9	0.1	0.0	0.3

7	P12	10.9	0.0	-0.1	0.4
7	P13	10.8	0.0	0.0	0.2
7	P14	10.9	0.1	0.0	1.2
7	P15	10.8	0.1	0.1	0.7
7	P16	11.0	0.1	0.1	0.6
7	P17	10.9	0.1	0.0	1.3
7	P18	11.0	0.1	0.0	0.5
7	P19	10.8	0.1	0.0	0.5
7	P20	10.9	0.1	0.1	0.6
7	P21	11.1	0.1	0.3	1.2
7	P23	10.8	0.1	0.2	0.8
7	P24	10.8	0.0	-0.1	0.3
8	P1	10.9	0.1	-0.1	0.2
8	P2	10.8	0.2	0.0	0.3
8	P3	11.0	0.3	0.0	0.4
8	P4	11.0	0.2	0.2	7.2
8	P5	11.1	0.0	0.0	0.4
8	P7	11.0	0.1	0.2	0.3
8	P8	11.1	0.1	0.0	0.5
8	P9	11.1	0.2	0.1	0.4
8	P10	11.0	0.4	0.2	2.7
8	P11	10.8	0.3	0.1	0.6
8	P12	10.9	-0.1	-0.2	0.3
8	P13	11.0	0.2	0.2	0.4
8	P14	11.0	-0.1	-0.1	0.9
8	P15	10.9	0.1	0.0	0.6
8	P16	10.8	0.2	0.0	0.7
8	P17	11.1	0.2	0.1	0.5
8	P18	10.9	0.2	0.0	1.0
8	P19	10.8	0.4	0.4	1.0
8	P20	10.7	0.3	0.0	0.4
8	P21	10.7	0.2	0.1	0.6
8	P23	10.9	-0.2	0.0	0.4
8	P24	10.9	0.0	-0.1	0.3
9	P1	11.1	0.0	0.1	0.1
9	P2	11.2	0.0	0.0	0.5
9	P3	11.4	-0.3	-0.1	0.3
9	P4	11.5	-0.1	0.0	0.8
9	P5	11.4	0.1	0.2	0.4
9	P7	11.6	-0.2	0.0	0.2
9	P8	11.2	0.1	0.1	0.5
9	P9	11.3	-0.1	0.0	0.1
9	P10	11.1	0.3	0.5	0.9
9	P11	11.1	0.0	0.2	0.5
9	P12	10.9	0.1	0.2	0.4
9	P13	10.9	0.0	0.0	0.3
9	P14	11.2	0.0	0.5	1.6
9	P15	10.8	0.1	0.4	0.4
9	P16	11.1	0.0	0.4	1.1

9	P17	10.9	-0.1	0.1	0.4
9	P18	10.9	0.1	0.2	0.3
9	P19	11.0	-0.1	0.1	0.4
9	P20	10.9	0.0	0.2	0.4
9	P21	10.7	0.1	0.4	1.2
9	P23	11.0	0.0	0.2	2.3
9	P24	9.8	-0.1	0.3	0.4
10	P1	11.7	0.0	2.4	1.4
10	P2	11.0	0.1	0.5	0.4
10	P3	11.4	-0.3	0.7	0.2
10	P4	11.0	0.0	0.2	0.7
10	P5	11.1	0.1	0.5	0.5
10	P7	11.1	0.0	0.5	1.2
10	P8	11.3	-0.1	0.1	0.2
10	P9	11.3	0.0	0.4	1.0
10	P10	11.2	0.2	0.4	0.2
10	P11	11.1	0.0	0.1	0.7
10	P12	11.2	0.0	0.1	0.4
10	P13	11.2	0.1	0.3	0.6
10	P14	11.1	0.0	0.2	0.6
10	P15	11.4	-0.1	0.6	3.0
10	P16	11.5	0.0	0.7	1.3
10	P17	11.0	0.0	0.6	0.6
10	P18	11.3	0.0	0.9	1.2
10	P19	11.1	0.0	0.2	0.4
10	P20	11.0	0.0	0.4	2.5
10	P21	10.8	0.0	0.5	1.2
10	P23	11.0	0.0	0.5	0.7
10	P24	10.8	0.1	0.2	0.2

LLCR (100 Cycles):

	mOhm values	Actual	Delta	Delta	Delta
Board	Position	Initial	100 Cycles	Thermal	Humidity
1	P1	11.2	0.2	0.0	0.8
1	P2	11.2	0.1	0.0	0.1
1	P3	11.2	0.1	-0.1	0.3
1	P4	11.3	-0.1	-0.1	0.4
1	P5	11.3	0.5	0.5	1.9
1	P7	11.5	0.1	0.0	0.4
1	P8	11.5	-0.2	-0.1	0.3
1	P9	11.4	-0.1	-0.1	0.4
1	P10	11.2	0.0	0.0	0.6
1	P11	11.2	-0.1	-0.1	0.7
1	P12	11.3	0.1	-0.1	1.4
1	P13	11.3	-0.1	-0.2	0.2
1	P14	11.0	-0.1	-0.1	0.8
1	P15	11.2	-0.1	0.0	0.6
1	P16	11.0	0.0	0.0	0.6
1	P17	11.0	0.1	0.0	0.8
1	P18	11.0	0.0	0.0	1.2
1	P19	11.0	0.4	0.3	0.5
1	P20	10.9	0.1	0.1	2.1
1	P21	10.9	0.3	0.3	1.1
1	P23	10.9	0.1	0.1	0.5
1	P24	10.9	0.4	0.4	2.3
2	P1	11.0	0.0	-0.1	0.6
2	P2	10.9	0.0	-0.1	0.2
2	P3	11.0	0.3	0.0	0.6
2	P4	11.1	0.1	-0.1	1.0
2	P5	11.4	0.1	0.3	0.8
2	P7	11.0	0.0	0.1	0.2
2	P8	11.3	-0.1	-0.2	0.3
2	P9	11.2	0.0	-0.2	0.4
2	P10	11.2	0.1	0.0	0.9
2	P11	10.9	0.0	-0.1	0.1
2	P12	10.9	0.0	-0.1	0.0
2	P13	10.9	-0.1	-0.1	0.1
2	P14	10.8	0.0	0.0	0.2
2	P15	10.8	-0.1	0.0	0.5
2	P16	10.9	0.0	0.0	0.3
2	P17	11.0	-0.2	-0.2	0.5
2	P18	10.7	0.0	0.0	0.4
2	P19	10.8	0.1	0.2	0.4
2	P20	11.6	-0.4	-0.3	0.0
2	P21	10.8	0.0	0.2	0.4
2	P23	11.0	-0.1	-0.1	0.5

2	P24	11.2	-0.2	-0.3	0.2
3	P1	11.2	0.1	0.2	1.7
3	P2	11.0	0.0	0.0	0.7
3	P3	11.1	0.1	0.0	1.1
3	P4	11.2	0.1	0.1	0.7
3	P5	11.2	0.0	0.0	1.1
3	P7	11.2	0.2	0.2	0.8
3	P8	11.2	0.0	0.0	1.1
3	P9	11.2	0.1	0.1	0.4
3	P10	11.4	-0.1	0.0	0.5
3	P11	11.1	0.2	0.2	0.4
3	P12	11.1	0.0	0.0	0.4
3	P13	10.9	0.2	0.1	0.3
3	P14	11.1	0.0	0.0	0.4
3	P15	11.0	0.0	-0.1	0.8
3	P16	10.9	0.1	0.0	0.7
3	P17	10.8	0.0	0.0	0.2
3	P18	11.0	0.0	0.1	0.4
3	P19	11.0	0.3	0.2	0.5
3	P20	10.9	0.1	0.3	0.8
3	P21	10.9	0.2	0.3	0.4
3	P23	10.9	0.1	0.3	0.5
3	P24	10.9	0.1	0.0	0.4
4	P1	11.3	0.2	0.1	0.3
4	P2	11.5	-0.1	-0.2	0.1
4	P3	11.5	0.0	-0.1	0.3
4	P4	11.3	0.2	0.1	0.6
4	P5	11.3	0.2	0.3	3.3
4	P7	11.2	0.2	0.3	0.4
4	P8	11.5	0.0	-0.1	0.4
4	P9	11.2	0.0	-0.1	0.2
4	P10	11.5	0.2	0.4	0.8
4	P11	11.2	0.3	0.0	0.4
4	P12	11.3	0.1	0.1	0.9
4	P13	11.1	-0.1	-0.2	0.3
4	P14	11.2	0.0	-0.2	0.1
4	P15	11.3	0.1	-0.1	2.0
4	P16	10.9	0.1	-0.1	0.4
4	P17	10.7	0.1	0.0	0.5
4	P18	10.9	0.1	-0.1	0.6
4	P19	10.8	0.3	0.1	0.4
4	P20	10.9	0.1	0.0	0.4
4	P21	10.9	0.2	0.2	0.5
4	P23	12.2	-1.0	-1.2	-1.1
4	P24	10.9	0.1	-0.1	0.2
5	P1	11.4	0.0	0.1	0.4
5	P2	11.1	0.1	0.3	0.7
5	P3	11.8	-0.2	0.6	0.1
5	P4	11.2	0.0	0.1	0.4

5	P5	11.6	-0.2	0.5	0.3
5	P7	11.3	0.0	0.2	0.3
5	P8	11.4	-0.1	0.3	0.2
5	P9	11.4	-0.1	0.3	0.3
5	P10	11.3	0.0	0.3	0.3
5	P11	11.3	0.4	0.8	0.9
5	P12	11.3	0.0	0.3	0.3
5	P13	11.0	0.0	0.2	0.1
5	P14	11.1	-0.1	0.3	0.4
5	P15	10.9	-0.1	0.1	0.2
5	P16	10.9	0.0	0.3	0.1
5	P17	11.0	0.0	0.1	0.1
5	P18	11.1	0.0	0.2	0.4
5	P19	11.0	-0.1	0.3	0.2
5	P20	11.2	0.1	0.8	0.7
5	P21	11.0	0.0	0.2	0.2
5	P23	10.8	0.1	0.2	0.2
5	P24	10.9	0.2	0.4	1.0
6	P1	11.0	0.0	0.1	0.4
6	P2	11.3	-0.1	-0.1	0.1
6	P3	11.4	0.0	0.2	0.5
6	P4	11.7	-0.2	-0.2	0.2
6	P5	11.3	0.1	0.2	0.9
6	P7	11.3	-0.2	-0.1	0.1
6	P8	11.3	0.0	0.1	0.3
6	P9	11.2	0.0	0.1	0.4
6	P10	11.1	0.0	0.1	0.2
6	P11	11.2	0.0	0.2	0.4
6	P12	11.0	-0.1	0.1	0.1
6	P13	10.9	-0.1	0.1	0.1
6	P14	11.1	0.0	0.2	0.4
6	P15	10.9	0.1	0.3	0.3
6	P16	10.9	0.0	0.1	0.1
6	P17	10.8	0.2	0.4	0.3
6	P18	10.7	0.2	0.4	0.3
6	P19	10.9	-0.1	0.2	0.1
6	P20	10.7	-0.1	0.1	0.1
6	P21	11.1	0.0	0.3	0.2
6	P23	10.9	0.0	-0.1	0.2
6	P24	11.1	-0.4	-0.4	0.1
7	P1	11.1	0.1	0.2	0.4
7	P2	11.1	0.1	0.1	0.4
7	P3	11.2	0.1	0.1	0.2
7	P4	11.1	0.0	0.0	0.2
7	P5	11.5	0.2	0.6	0.8
7	P7	11.2	0.1	0.2	1.1
7	P8	11.1	0.0	0.1	0.7
7	P9	11.0	0.1	0.1	0.4
7	P10	11.1	0.0	-0.1	0.6

7	P11	11.3	-0.1	-0.2	0.5
7	P12	11.2	-0.1	-0.2	0.5
7	P13	10.9	-0.2	-0.3	0.1
7	P14	11.0	-0.2	-0.1	0.2
7	P15	11.1	-0.1	0.1	1.0
7	P16	11.1	-0.2	-0.1	1.0
7	P17	11.0	0.0	0.1	0.2
7	P18	11.0	-0.1	0.0	0.4
7	P19	10.8	-0.1	0.1	0.7
7	P20	11.0	0.2	0.5	1.5
7	P21	11.0	0.1	0.4	0.6
7	P23	11.1	0.3	0.5	0.7
7	P24	10.8	0.1	0.1	0.6
8	P1	11.4	-0.1	-0.1	0.0
8	P2	11.9	-0.1	0.5	0.4
8	P3	11.3	0.1	0.1	0.2
8	P4	11.2	0.0	-0.1	0.1
8	P5	11.5	0.0	-0.1	0.2
8	P7	11.4	0.0	0.2	0.0
8	P8	11.6	0.1	0.2	0.3
8	P9	11.3	0.0	-0.2	-0.1
8	P10	11.1	-0.1	-0.1	0.0
8	P11	11.6	0.0	0.0	0.2
8	P12	11.3	-0.1	-0.1	0.2
8	P13	11.3	0.0	-0.1	0.1
8	P14	11.3	-0.2	-0.3	0.0
8	P15	11.4	-0.2	-0.4	-0.1
8	P16	11.2	-0.1	-0.1	0.0
8	P17	11.0	-0.1	-0.2	0.2
8	P18	11.1	-0.1	-0.1	0.2
8	P19	10.9	0.1	0.0	0.5
8	P20	11.0	-0.1	0.2	0.7
8	P21	11.7	-0.6	-0.5	-0.5
8	P23	10.8	0.0	-0.1	0.1
8	P24	10.9	-0.1	-0.1	0.1
9	P1	11.4	-0.1	0.1	0.7
9	P2	11.3	-0.1	-0.1	0.7
9	P3	11.3	0.1	0.1	0.4
9	P4	11.2	0.0	0.1	0.4
9	P5	12.0	-0.2	0.2	0.8
9	P7	11.2	0.7	2.5	1.8
9	P8	11.2	-0.1	0.1	0.2
9	P9	11.2	0.1	0.4	0.3
9	P10	11.3	-0.2	0.1	0.0
9	P11	11.2	-0.2	0.3	0.0
9	P12	11.6	0.0	0.2	-0.1
9	P13	11.1	-0.1	0.2	0.1
9	P14	11.0	-0.1	0.3	0.4
9	P15	11.0	0.0	0.3	0.3

9	P16	11.0	0.0	0.3	0.6
9	P17	11.0	-0.1	0.2	0.5
9	P18	11.2	0.2	0.6	0.4
9	P19	11.2	0.1	0.6	0.5
9	P20	11.1	0.2	0.4	0.5
9	P21	11.1	-0.1	0.2	0.3
9	P23	11.5	0.1	0.6	0.3
9	P24	11.2	0.0	0.0	0.2
10	P1	11.7	-0.4	-0.4	-0.1
10	P2	11.6	-0.1	0.0	0.3
10	P3	11.8	-0.1	-0.1	0.3
10	P4	12.5	-0.2	0.1	0.2
10	P5	12.3	0.1	0.3	1.5
10	P7	11.4	0.0	0.3	2.7
10	P8	11.3	0.0	0.3	0.3
10	P9	11.2	-0.1	0.3	0.1
10	P10	11.4	0.0	0.8	4.8
10	P11	11.4	-0.1	0.4	0.6
10	P12	11.3	-0.1	0.3	0.2
10	P13	11.1	-0.1	0.3	0.1
10	P14	11.1	-0.1	0.3	0.1
10	P15	11.2	-0.1	0.2	0.3
10	P16	11.2	-0.2	0.3	0.2
10	P17	11.2	-0.1	0.2	0.1
10	P18	11.3	-0.2	0.1	0.7
10	P19	11.0	0.0	0.3	0.3
10	P20	11.2	-0.2	-0.2	-0.2
10	P21	10.9	0.0	0.3	0.1
10	P23	10.9	0.1	0.2	1.1
10	P24	11.1	-0.2	-0.1	0.5

GAS TIGHT:

	mOhm values	Actual	Delta
Board	Position	Initial	Gas Tight
1	P1	11.2	0.0
1	P2	10.8	0.2
1	P3	11.2	0.2
1	P4	11.0	0.3
1	P5	11.6	0.4
1	P7	11.1	0.3
1	P8	11.2	0.2
1	P9	11.1	0.4
1	P10	11.2	0.6
1	P11	11.2	0.4
1	P12	11.3	0.2
1	P13	11.0	0.3
1	P14	11.0	0.3
1	P15	11.0	0.3
1	P16	10.7	0.3
1	P17	10.9	0.3
1	P18	10.9	0.3
1	P19	10.8	0.3
1	P20	10.9	0.5
1	P21	11.1	0.6
1	P23	10.9	0.5
1	P24	10.7	0.2
2	P1	10.9	0.1
2	P2	11.1	0.1
2	P3	11.0	0.0
2	P4	11.1	0.0
2	P5	11.3	0.1
2	P7	11.1	0.2
2	P8	11.2	0.1
2	P9	11.0	0.2
2	P10	10.9	0.2
2	P11	11.2	0.2
2	P12	11.1	0.2
2	P13	11.0	0.1
2	P14	11.0	0.2
2	P15	10.8	0.2
2	P16	10.8	0.2
2	P17	10.9	0.2
2	P18	10.8	0.2
2	P19	10.8	0.2
2	P20	10.9	0.2
2	P21	10.9	0.3
2	P23	10.6	0.1

2	P24	11.1	0.2
3	P1	11.1	0.0
3	P2	11.5	-0.1
3	P3	11.4	0.0
3	P4	11.3	0.3
3	P5	11.1	0.3
3	P7	11.2	0.2
3	P8	11.0	0.1
3	P9	11.1	0.1
3	P10	11.3	-0.1
3	P11	11.6	-0.1
3	P12	11.5	0.0
3	P13	11.5	-0.2
3	P14	11.5	-0.1
3	P15	11.4	0.1
3	P16	11.3	0.4
3	P17	10.9	0.0
3	P18	11.0	0.1
3	P19	10.9	0.1
3	P20	11.0	0.2
3	P21	11.0	0.0
3	P23	11.7	0.2
3	P24	11.2	0.1
4	P1	11.1	0.1
4	P2	11.1	0.1
4	P3	11.3	0.3
4	P4	11.1	0.1
4	P5	11.0	0.1
4	P7	11.2	0.2
4	P8	11.1	0.2
4	P9	11.4	0.2
4	P10	11.0	0.1
4	P11	11.2	0.2
4	P12	11.1	0.1
4	P13	11.1	0.0
4	P14	11.0	0.1
4	P15	11.0	0.0
4	P16	10.8	0.1
4	P17	11.0	0.1
4	P18	10.8	0.1
4	P19	10.9	0.1
4	P20	10.9	0.0
4	P21	10.9	0.1
4	P23	11.3	0.1
4	P24	11.0	0.1
5	P1	11.3	0.1
5	P2	11.2	0.2
5	P3	11.8	0.3
5	P4	11.7	0.2

5	P5	12.0	0.3
5	P7	11.1	0.1
5	P8	11.3	0.1
5	P9	11.2	0.1
5	P10	11.1	0.1
5	P11	11.2	0.1
5	P12	11.2	0.2
5	P13	11.0	0.1
5	P14	10.9	0.1
5	P15	11.2	0.1
5	P16	11.0	0.1
5	P17	10.9	0.1
5	P18	10.9	0.1
5	P19	10.9	0.2
5	P20	10.9	0.2
5	P21	11.1	0.0
5	P23	12.1	0.7
5	P24	10.9	0.2
6	P1	12.1	0.1
6	P2	11.0	0.2
6	P3	11.0	0.3
6	P4	11.0	0.2
6	P5	11.0	0.2
6	P7	11.2	0.3
6	P8	11.0	0.4
6	P9	16.8	-4.4
6	P10	10.9	0.6
6	P11	11.4	-0.2
6	P12	11.0	0.2
6	P13	14.0	-0.1
6	P14	11.0	0.3
6	P15	11.4	0.1
6	P16	11.0	0.2
6	P17	11.1	0.3
6	P18	10.8	0.2
6	P19	11.0	0.1
6	P20	11.3	0.2
6	P21	12.0	-0.4
6	P23	10.9	0.2
6	P24	11.0	0.3
7	P1	11.0	0.1
7	P2	11.6	0.4
7	P3	10.9	0.1
7	P4	11.1	0.1
7	P5	11.0	0.1
7	P7	11.1	0.2
7	P8	11.0	0.2
7	P9	11.1	0.1
7	P10	13.0	-1.6

7	P11	11.0	0.1
7	P12	11.1	0.2
7	P13	10.9	0.1
7	P14	11.1	0.0
7	P15	10.8	0.2
7	P16	10.9	0.1
7	P17	11.1	0.1
7	P18	10.8	0.1
7	P19	10.8	0.2
7	P20	10.8	0.1
7	P21	10.8	0.1
7	P23	10.6	0.2
7	P24	11.0	0.2
8	P1	11.2	0.2
8	P2	11.5	0.0
8	P3	11.1	0.1
8	P4	11.2	0.1
8	P5	11.2	0.1
8	P7	11.2	0.2
8	P8	11.3	0.3
8	P9	11.4	0.2
8	P10	11.5	0.4
8	P11	11.1	0.3
8	P12	11.2	0.2
8	P13	11.7	0.0
8	P14	11.0	0.1
8	P15	11.6	0.1
8	P16	11.0	0.3
8	P17	11.2	0.4
8	P18	10.8	0.2
8	P19	11.0	0.2
8	P20	11.1	0.1
8	P21	11.2	0.3
8	P23	10.9	0.1
8	P24	11.1	0.1

EQUIPMENT AND CALIBRATION SCHEDULES

Equipment #: MO-04
Description: Multimeter /Data Acquisition System
Manufacturer: Keithley
Model: 2700
Serial #: 0798688
Accuracy: See Manual
… Last Cal: 04/06/09, Next Cal: 04/06/2010

Equipment #: MO-11
Description: Switch/Multimeter
Manufacturer: Keithley
Model: 3706
Serial #: 120169
Accuracy: See Manual See Manual
… Last Cal: 08/09/2008, Next Cal: 08/08/2009

Equipment #: MV-08
Description: 6" x 6" Video Measuring Machine
Manufacturer: Micro-Vu
Model: M3010898
Serial #: V9472
Accuracy: See Manual
… Last Cal: 02/10/2009, Next Cal: 02/10/2010

Equipment #: TCT-03
Description: Dillon Quantrol TC2 Test Stand
Manufacturer: Dillon Quantrol
Model: TC2
Serial #: 02-1033-03
Accuracy: Speed Accuracy: +/- 5% of indicated speed; Displacement: +/- 5 micrometers.
… Last Cal: 5/12/2009, Next Cal: 5/6/2010

Equipment #: TCT-04
Description: Dillon Quantrol TC21 25-1000 mm/min series test stand
Manufacturer: Dillon Quantrol
Model: TC2 I series test stand
Serial #: 04-1041-04
Accuracy: Speed Accuracy: +/- 5% of indicated speed; Speed Accuracy: +/- 5% of indicated speed;
… Last Cal: 5/12/2009, Next Cal: 5/12/2010

Equipment #: OV-5
Description: Forced Air Oven, 5 Cu. Ft., 120 V
Manufacturer: Sheldon Mfg.
Model: CE5F
Serial #: 02008008
Accuracy: +/- 5 deg. C
… Last Cal: 02/19/2009, Next Cal: 02/19/2010

Equipment #: HPM-01
Description: Hipot Megommeter
Manufacturer: Hipotronics
Model: H306B-A
Serial #: M9905004
Accuracy: 2 % Full Scale Accuracy 2 % Full Scale Accuracy
… Last Cal: 11/24/08, Next Cal: 11/24/09

Equipment #: RS-09
Description: Current Shunt
Manufacturer: Empro
Model: HA10050
Serial #: HA10050-1
Accuracy: +/- 0.25% of RDG
… Last Cal: 05/14/2009, Next Cal: 05/14/2010

Equipment #: THC-04
Description: Temperature/Humidity Chamber
Manufacturer: Thermotron
Model: SM-8-3800
Serial #: 37782
Accuracy: See Manual
… Last Cal: 04/07/2009, Next Cal: 04/07/2010