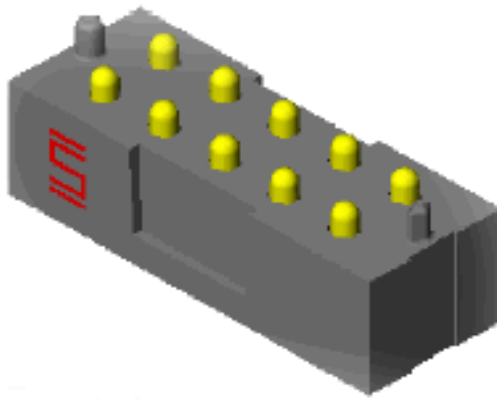




Project Number:		Tracking Code: TC0544--0868			
Requested by: Corey Rose		Date: 12/27/2005		Product Rev: 3	
Part #: PGP-105-01-G-D-AD			Lot #: 516152-0	Tech: Troy Cook	Eng: Mark Shireman
Part description: pogo pin connector					Qty to test: 110
Test Start: 11/15/2005		Test Completed: 12/15/2005			



PGP DVT Report

PART DESCRIPTION

PGP-105-01-G-D-AD

Mated with PCB-100357-TST-XX (Card)

CERTIFICATION

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

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SCOPE

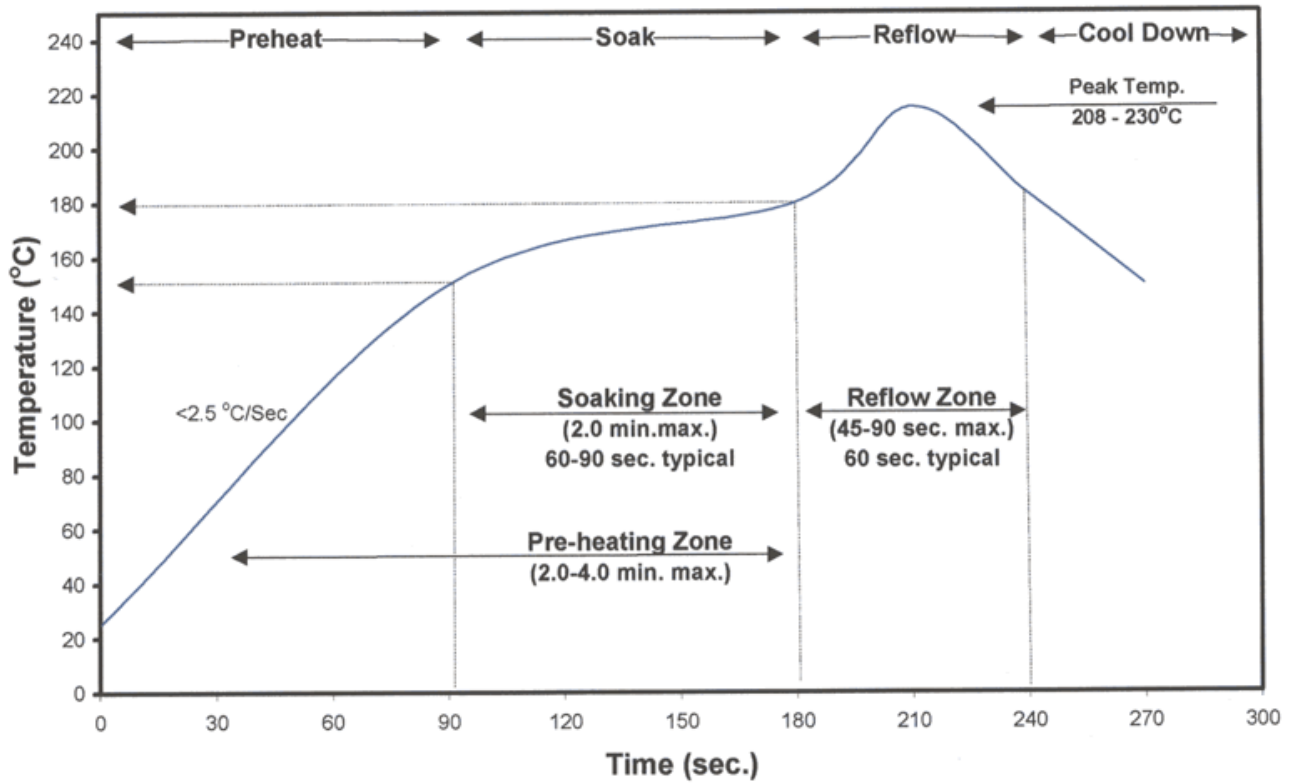
To perform the following tests: TEST PER THE "PGP FLOWCHART 091605".

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) The ultrasonic procedure can be used with either aqueous or non-aqueous soldering components and follows:
 - a. Sample test boards are to be ultrasonically cleaned after test lead attachment, preparation and/or soldering.
 - b. Sample test boards are immersed into Branson 3510 cleaner containing Kyzen Ionox HC1 (or equivalent) with the following conditions:
 - i. Temperature: -----55° C +/- 5° C
 - ii. Frequency:-----40 KHz
 - iii. Immersion Time: ---5 to 10 Minutes
 - c. Sample test boards are removed and placed into the Branson 3510 cleaner containing deionized water with the following conditions:
 - i. Temperature: -----55° C +/- 5° C
 - ii. Frequency:-----40 KHz
 - iii. Immersion Time: ---5 to 10 Minutes
 - d. Sample test boards are removed and placed in a beaker positioned on a hot plate with a magnetic stirrer containing deionized water warmed to 55° C +/- 5° C for 1/2 to 1 minute.
 - e. Upon removal, the sample boards are rinsed for 1/2 to 1 minute at room temperature with free flowing deionized water.
 - f. After the final rinse, the sample test boards are dried in an air-circulating oven for 10 to 15 minutes at 50° C +/- 5° C.
 - g. Sample test boards are then allowed to set and recover to room ambient condition prior to testing.
- 7) Parts not intended for testing LLCR and DWV/IR are visually inspected and cleaned if necessary.
- 8) Any additional preparation will be noted in the individual test sequences.
- 9) Solder Information: SN63/PB37
- 10) Re-Flow Time/Temp: See accompanying profile.
- 11) Internal Test PCBs used: PCB-100357-TST-XX

OVEN PROFILE (Soldering Parts to Test Boards)**Standard Solder Paste Reflow Profile
for Kester Paste Containing
Alloys: Sn63Pb37 or Sn62Pb36Ag02**

FLOWCHARTS**Current Carrying Capacity**

TEST STEP	GROUP A 1 board min 6 Contacts in series, clustered if possible
01	CCC

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

Mating/Unmating/Normal Force

TEST STEP	GROUP A 5 Boards 100 Cycles	GROUP B1 Individual Contacts (8) min	GROUP B2 Individual Contacts (8) min
01	Contact Height	Setup Approve	Setup Approve
02	Data Review	Normal Force	Thermal Aging (Mated)
03	100 Cycles	Data Review	Normal Force
04	Contact Height		
05	Data Review		
06	Thermal Aging (Mated)		
07	Contact Height		
08	Data Review		
09	Humidity (Mated)		
10	Contact Height		
11	Data Review		

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

Mating/Un-Mating Forces = EIA-364-13

Normal Force = EIA-364-04

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

FLOWCHARTS Continued**IR / DWV**

TEST STEP	GROUP A 2 Boards Ambient	GROUP B1 2 Boards Ambient	GROUP B2 2 Boards Thermal	GROUP B3 2 Boards Humidity
01	IR	DWV/Working Voltage	Thermal Aging	Humidity
02	Data Review		DWV/Working Voltage	DWV/Working Voltage
03	Thermal Aging			
04	IR			
05	Data Review			
06	Humidity			
07	IR			

**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**

IR = EIA-364-21

DWV = EIA-364-20

FLOWCHARTS Continued**Durability/Thermal Age/Cyclic Humidity**

TEST STEP	GROUP A 200 Points 100 Cycles
01	LLCR-1
02	Data Review
03	100 Cycles
04	LLCR-2
05	Data Review
06	Thermal Age
07	LLCR-3
08	Data Review
09	Cyclic Humidity
10	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/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

Gas Tight

TEST STEP	GROUP A 200 Points (min)
01	LLCR-1
02	Gas Tight
03	LLCR-2

Gas Tight = EIA-364-36

LLCR = EIA-364-23, LLCR

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

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) Connectors are sometimes mated and all samples are pre-conditioned at ambient.

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) Connectors are sometimes mated and all samples are pre-conditioned at ambient.

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. 85° C
 - c. 95° C
 - d. 115° 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 HEIGHT:

- 1) Heights 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.

NORMAL FORCE (FOR CONTACTS TESTED IN THE HOUSING):

- 1) Reference document: EIA-364-04, *Normal Force Test Procedure for Electrical Connectors*.
- 2) The contacts shall be tested in the connector housing.
- 3) If necessary, a "window" shall be made in the connector body to allow a probe to engage and deflect the contact at the same attitude and distance (plus 0.05 mm [0.002"]) as would occur in actual use.
- 4) The connector housing shall be placed in a holding fixture that does not interfere with or otherwise influence the contact force or deflection.
- 5) Said holding fixture shall be mounted on a floating, adjustable, X-Y table on the base of the Dillon TC², computer controlled test stand with a deflection measurement system accuracy of 5.0 μm (0.0002").
- 6) The nominal deflection rate shall be 5 mm (0.2")/minute.
- 7) Unless otherwise noted a minimum of five contacts shall be tested.
- 8) The force/deflection characteristic to load and unload each contact shall be repeated five times.
- 9) The system shall utilize the TC² software in order to acquire and record the test data.
- 10) The permanent set of each contact shall be measured within the TC² software.
- 11) 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.

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
 - 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
 - ii. Rate of Application 500 V/Sec
 - iii. 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. $\leq +5.0$ 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. $\leq +5.0$ 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 less than 10.
 - 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° 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-----2.9 A per contact with 6 adjacent contacts powered

Contact Height

- Initial
 - Min-----0.0304"
 - Max-----0.0316"
- After 100 Cycles
 - Min-----0.0304"
 - Max-----0.0316"
- Thermal
 - Min-----0.0304"
 - Max-----0.0316"
- Humidity
 - Min-----0.0304"
 - Max-----0.0323"

Normal Force at .031" deflection

- Initial
 - Min-----71.2 grams Set ---- 0.000"
 - Max-----79.9 grams Set -----0.003"
- Thermal
 - Min-----67.1 grams
 - Max-----72.5 grams

Insulation Resistance minimums, IR

- Initial
 - Mated-----100,000 Meg Ω ----- Pass
 - Unmated -----100,000 Meg Ω
- Thermal
 - Mated-----100,000 Meg Ω
 - Unmated -----15,000 Meg Ω
- Humidity
 - Mated-----100,000 Meg Ω
 - Unmated -----100,000 Meg Ω

Dielectric Withstanding Voltage minimums, DWV

- Initial
 - Breakdown
 - Mated-----1,500 VAC
 - Unmated-----1,600 VAC
 - DWV
 - Mated-----1,125 VAC
 - Unmated-----1,200 VAC
 - Working voltage
 - Mated-----375 VAC
 - Unmated-----400 VAC
- Thermal
 - Breakdown
 - Mated-----1,800 VAC
 - Unmated-----1,600 VAC

RESULTS Continued

- DWV
 - Mated -----1,350 VAC
 - Unmated-----1,200 VAC
- Working voltage
 - Mated -----450 VAC
 - Unmated-----400 VAC
- Humidity
 - Breakdown
 - Mated -----1,600 VAC
 - Unmated-----1,900 VAC
 - DWV
 - Mated -----1,200 VAC
 - Unmated-----1,425 VAC
 - Working voltage
 - Mated -----400 VAC
 - Unmated-----475 VAC

LLCR Durability (160 LLCR test points)

- Initial -----7.3 mOhms Max
- Durability, 100 Cycles
 - <= +5.0 mOhms ----- 160 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 ----- 160 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 ----- 155 Points ----- Stable
 - +5.1 to +10.0 mOhms ----- 5 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

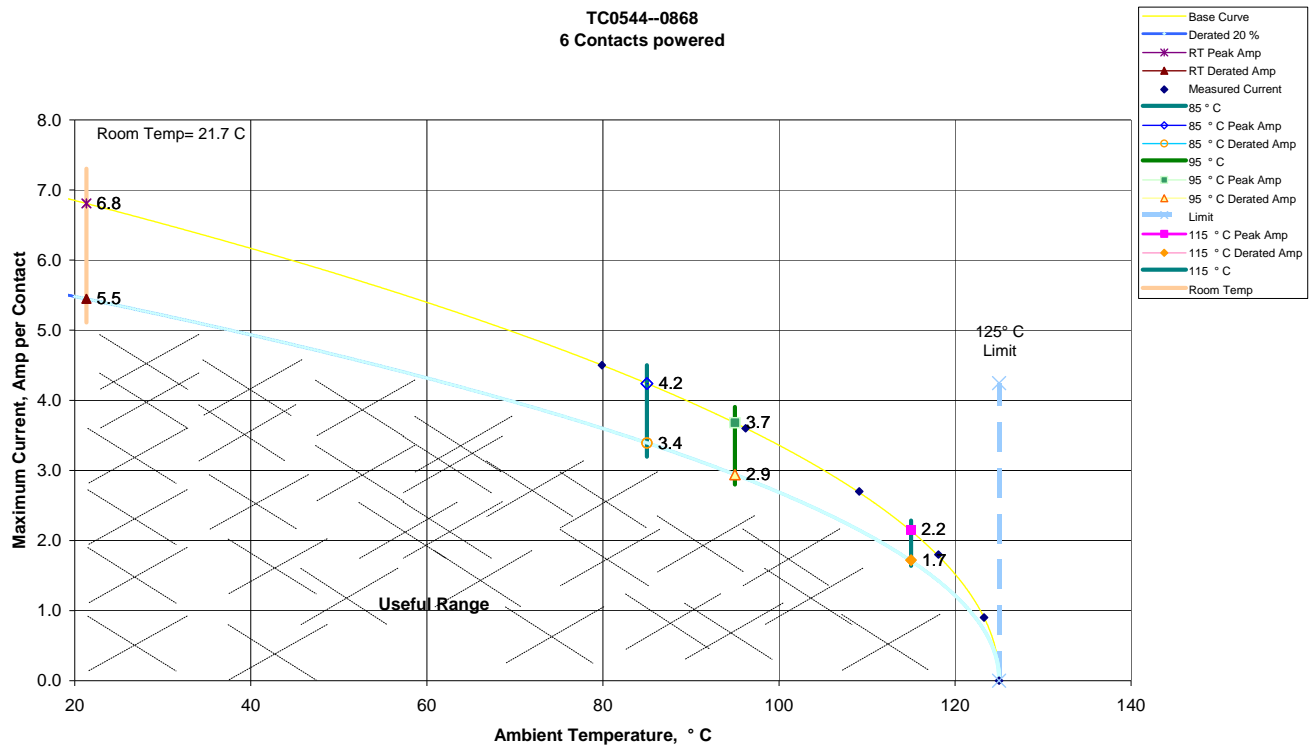
LLCR Gas Tight (160 LLCR test points)

- Initial -----9.1 mOhms Max
- Gas-Tight
 - <= +5.0 mOhms ----- 160 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 in a clustered configuration with SIX adjacent conductors/contacts powered in a 2 X 3 configuration.

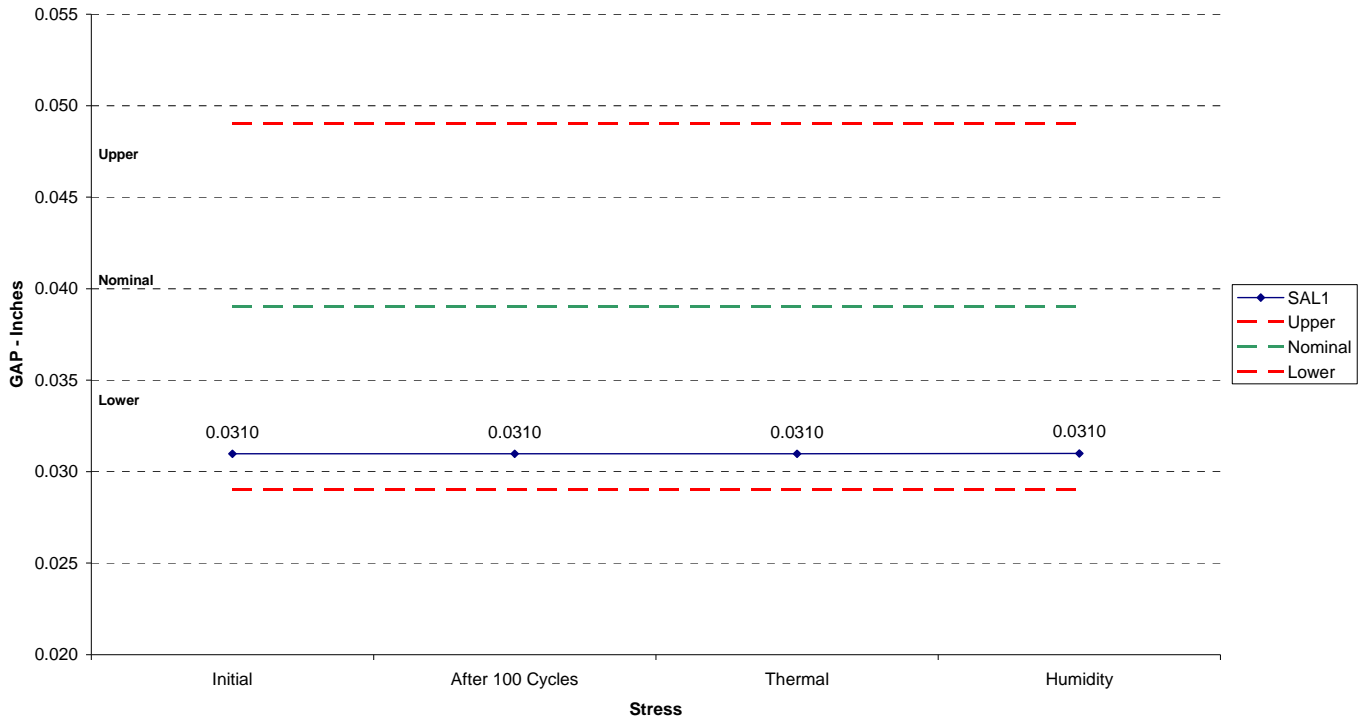


DATA SUMMARIES Continued

CONTACT HEIGHT:

Initial		After 100 Cycles		After Thermals		After Humidity	
Measurements in inches		Measurements in inches		Measurements in inches		Measurements in inches	
<i>Minimum</i>	0.0304	<i>Minimum</i>	0.0304	<i>Minimum</i>	0.0304	<i>Minimum</i>	0.0304
<i>Maximum</i>	0.0316	<i>Maximum</i>	0.0316	<i>Maximum</i>	0.0316	<i>Maximum</i>	0.0323
<i>Average</i>	0.0310	<i>Average</i>	0.0310	<i>Average</i>	0.0310	<i>Average</i>	0.0310
<i>St. Dev.</i>	0.0004	<i>St. Dev.</i>	0.0004	<i>St. Dev.</i>	0.0004	<i>St. Dev.</i>	0.0005
<i>Count</i>	100	<i>Count</i>	100	<i>Count</i>	100	<i>Count</i>	100

Height Measurements

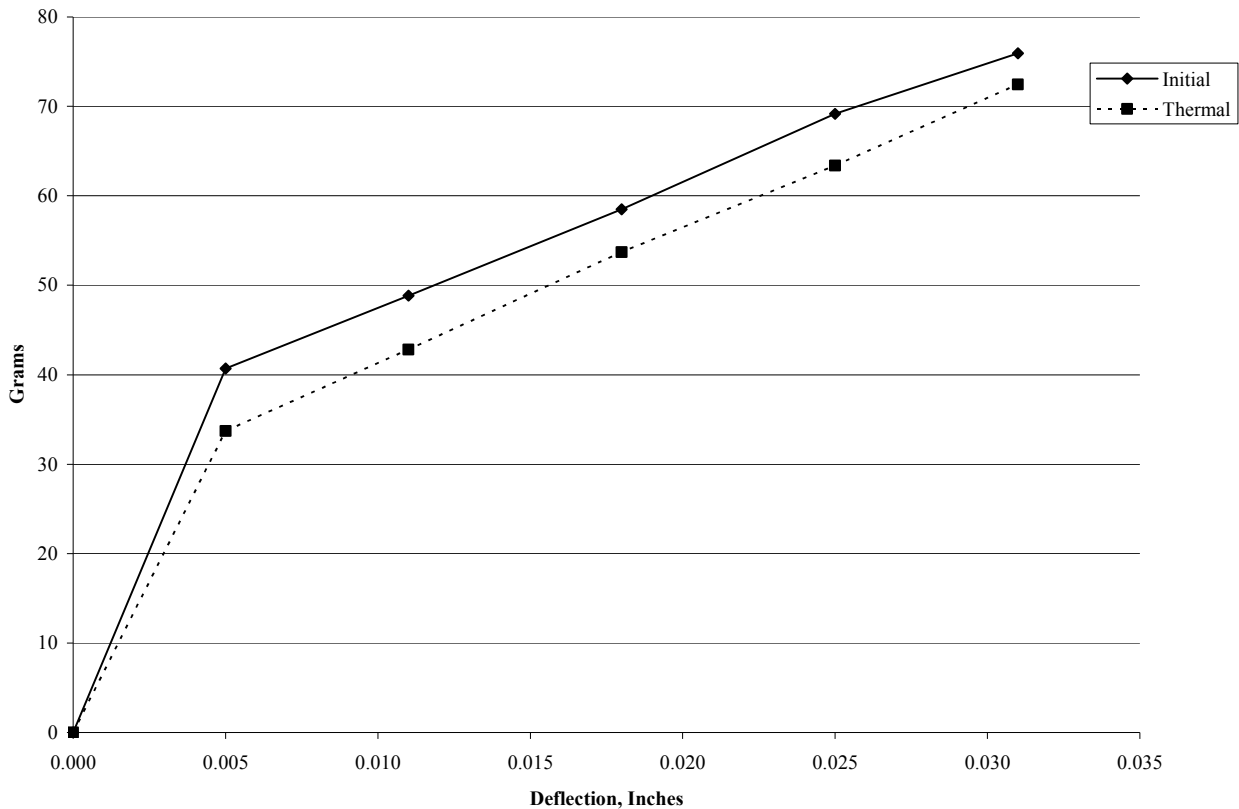


DATA SUMMARIES Continued**NORMAL FORCE (FOR CONTACTS TESTED IN THE HOUSING):**

- 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 inches Forces in Grams					
	<u>0.0050</u>	<u>0.0110</u>	<u>0.0180</u>	<u>0.0250</u>	<u>0.0310</u>	<u>SET</u>
Averages	40.69	48.83	58.49	69.16	75.91	0.0002
Min	35.20	42.20	55.50	65.50	71.20	0.0000
Max	44.40	53.90	62.00	73.40	79.90	0.0003
St. Dev	3.70	4.00	2.63	2.78	3.11	0.0001
Count	7	7	7	7	7	7

Thermal	Deflections in inches Forces in Grams					
	<u>0.0050</u>	<u>0.0110</u>	<u>0.0180</u>	<u>0.0250</u>	<u>0.0310</u>	<u>SET</u>
Averages	33.71	42.83	53.70	63.36	72.45	0.0001
Min	31.10	39.80	49.30	58.50	67.10	0.0000
Max	36.60	45.80	56.00	66.10	76.30	0.0003
St. Dev	2.13	2.45	2.38	2.72	3.24	0.0001
Count	8	8	8	8	8	8

Normal Force Compare

DATA SUMMARIES Continued**INSULATION RESISTANCE (IR):**

	Initial, Meg Ohms		Thermal, Meg Ohms		Humidity, Meg Ohms	
	Mated	Unmated	Mated	Unmated	Mated	Unmated
	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>
Average	100000	100000	100000	71667	100000	100000
Min	100000	100000	100000	15000	100000	100000
Max	100000	100000	100000	100000	100000	100000

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

	Initial, VAC Mated			Initial, VAC Unmated		
	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>
Average	1550	1163	388	1600	1200	400
Min	1500	1125	375	1600	1200	400
Max	1600	1200	400	1600	1200	400

	Thermal, VAC Mated			Thermal, VAC Unmated		
	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>
Average	1850	1388	463	1600	1200	400
Min	1800	1350	450	1600	1200	400
Max	1900	1425	475	1600	1200	400

	Humidity, VAC Mated			Humidity, VAC Unmated		
	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>
Average	1650	1238	413	1900	1425	475
Min	1600	1200	400	1900	1425	475
Max	1700	1275	425	1900	1425	475

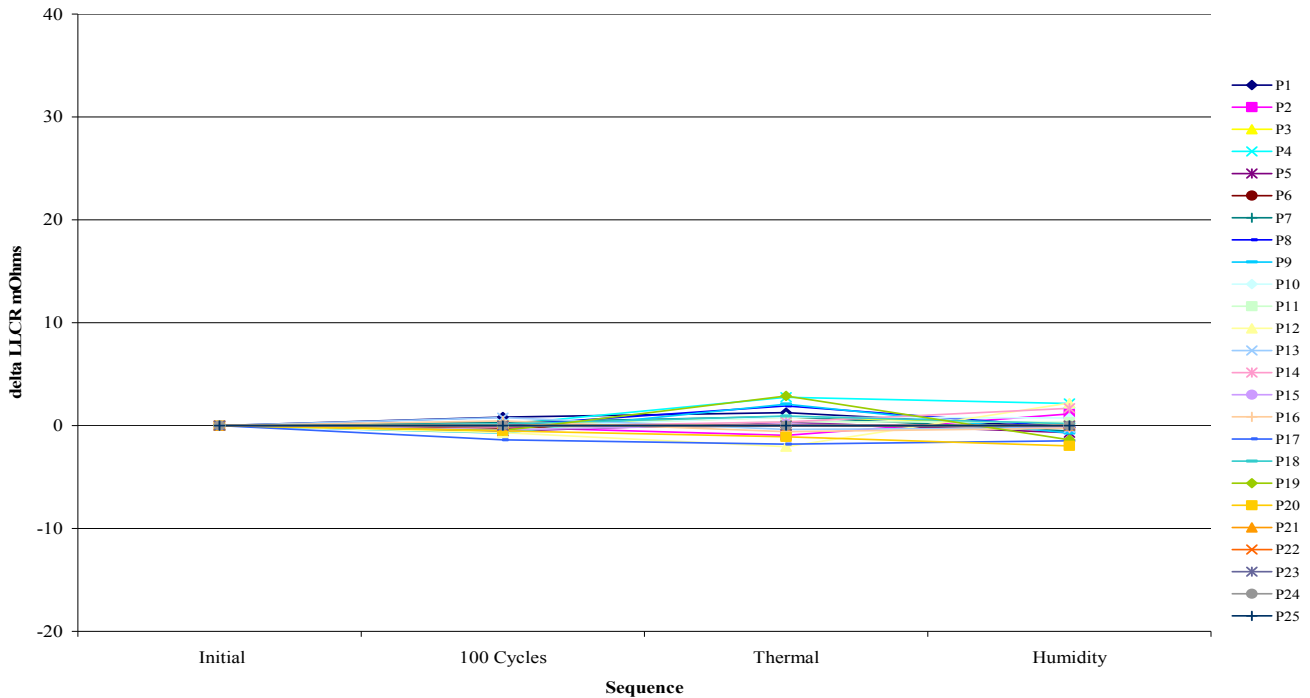
DATA SUMMARIES Continued

LLCR:

- 1) A total of 160 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. $\leq +5.0$ 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

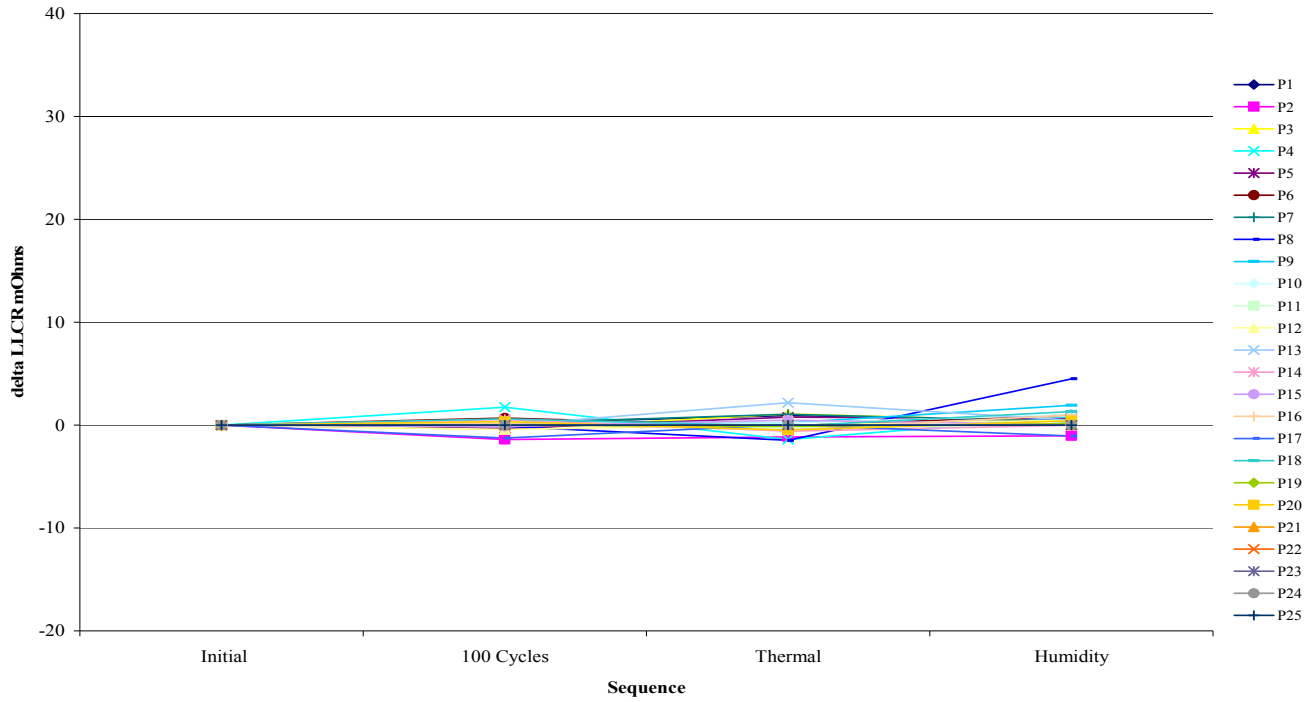
Date	Nov. 16 2005	Nov. 18 2005	Nov. 30 2005	Dec. 13 2005
Room Temp C	23	23	23	23
RH	32%	43%	22%	13%
Name	Troy Cook	Troy Cook	Troy Cook	Troy Cook
mOhm values	Actual	Delta 100 Cycles	Delta Thermal	Delta Humidity
	Initial			
Average	5.0	-0.1	0.1	0.3
St. Dev.	0.7	0.8	1.1	1.6
Min	3.7	-2.7	-2.1	-2.3
Max	7.3	3.2	3.4	8.5
Count	160	160	160	160

Board #1

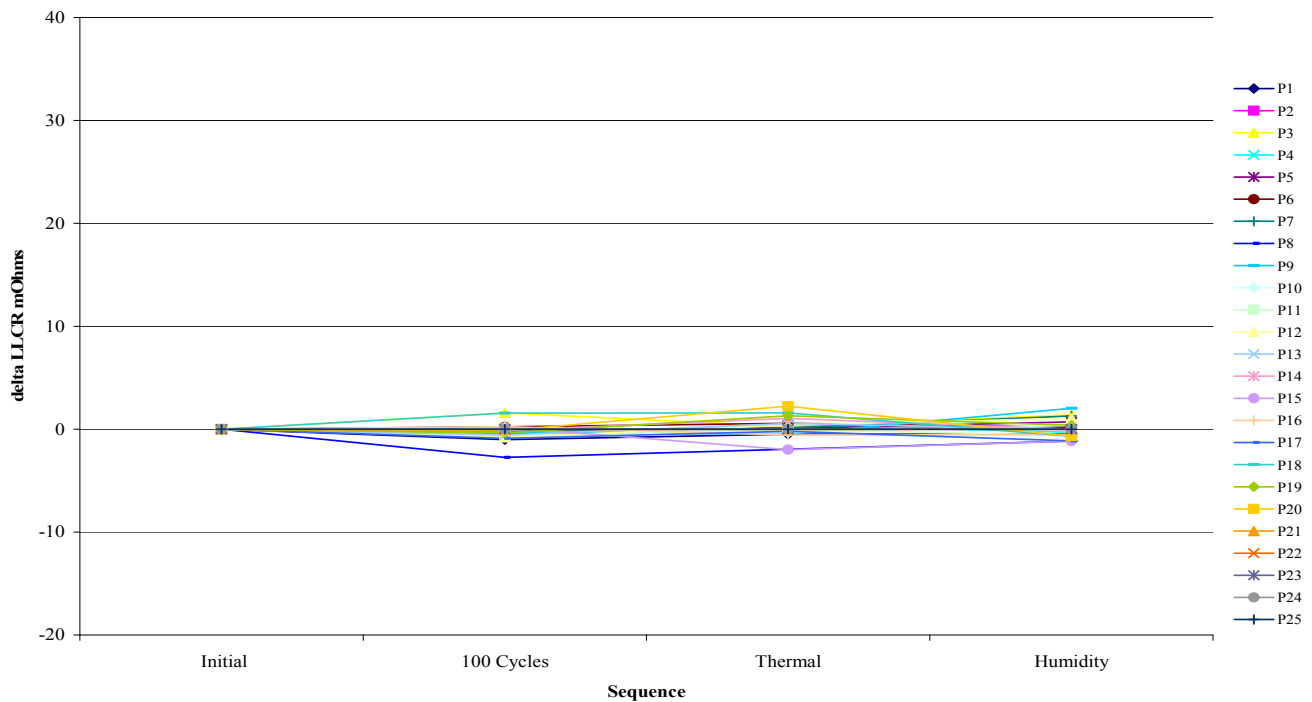


DATA SUMMARIES Continued

Board #2

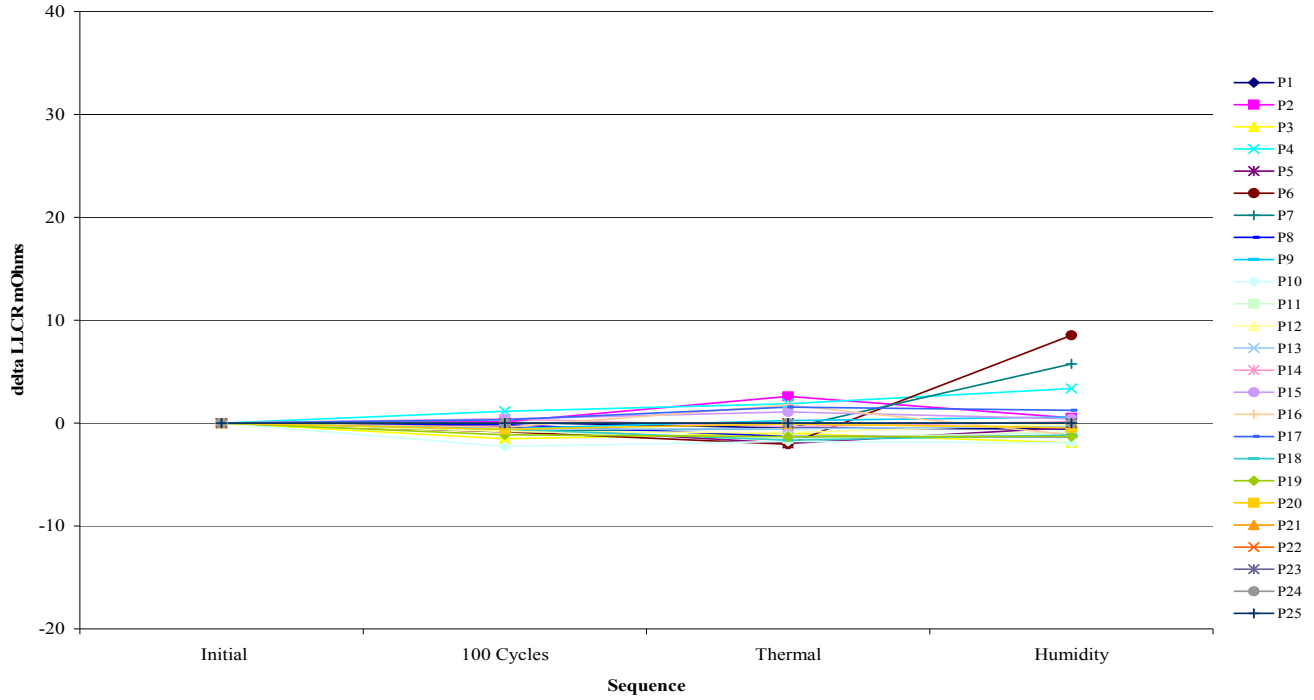


Board #3

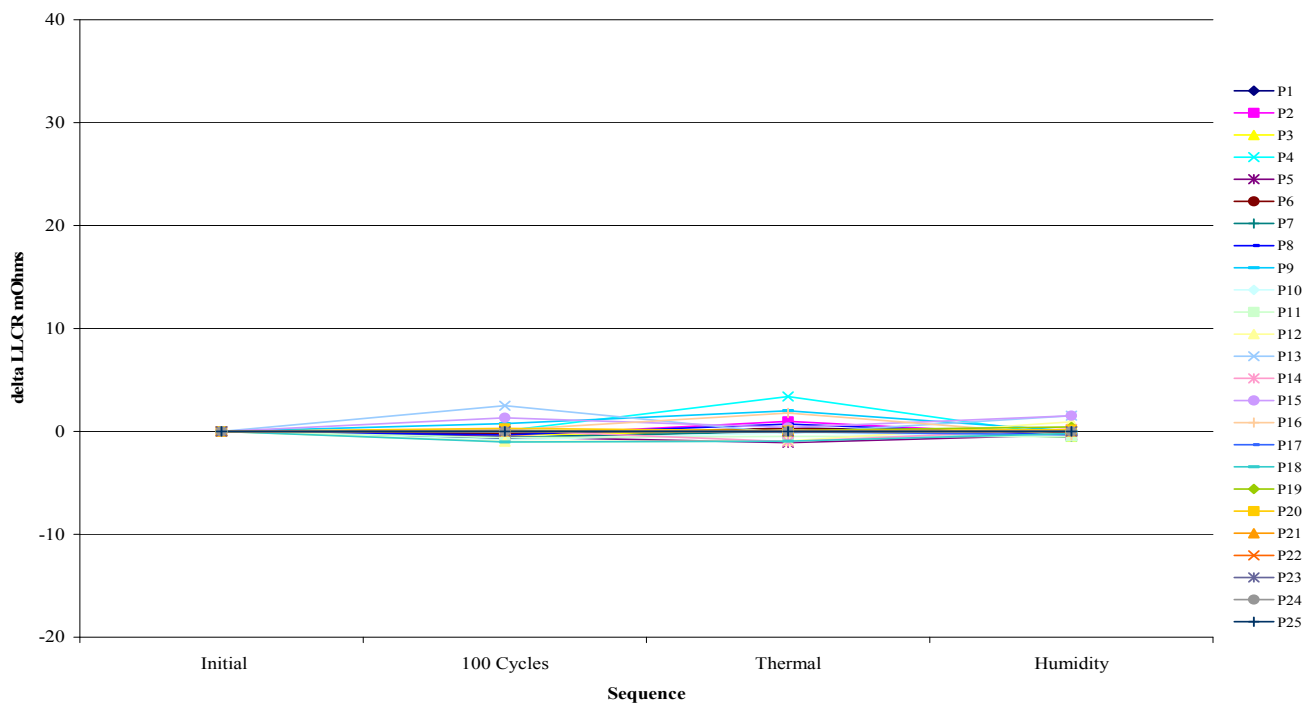


DATA SUMMARIES Continued

Board #4

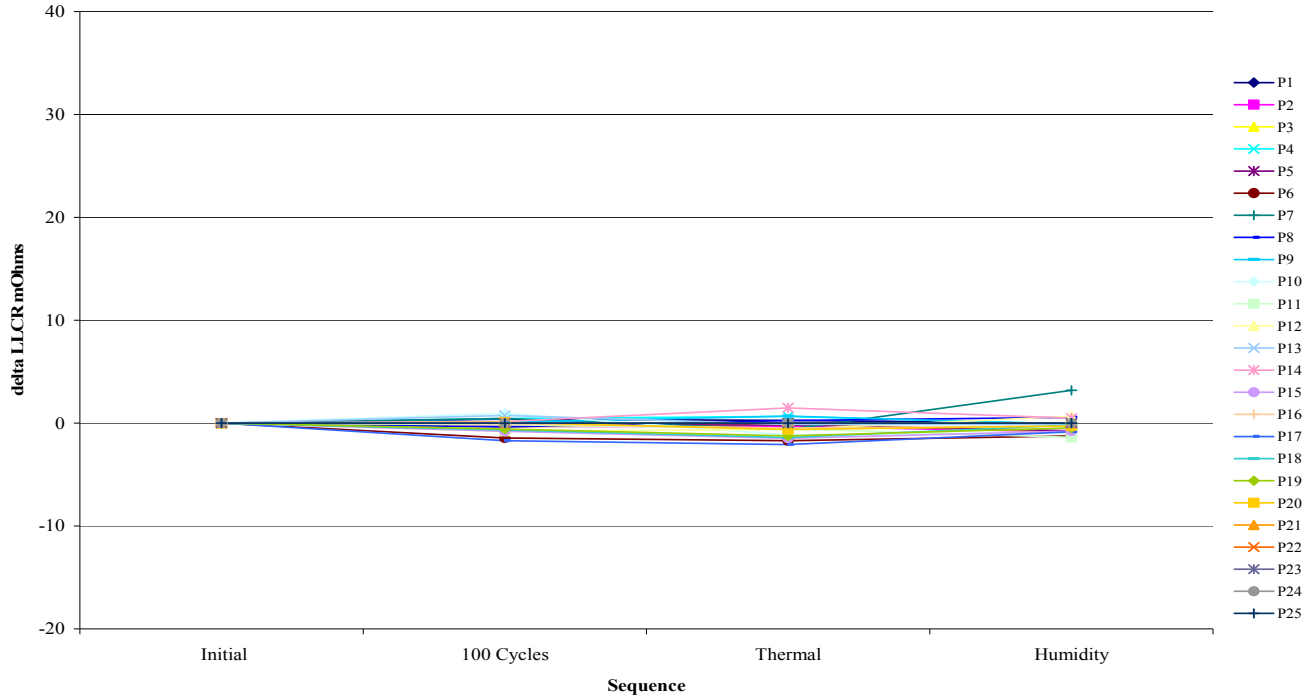


Board #5

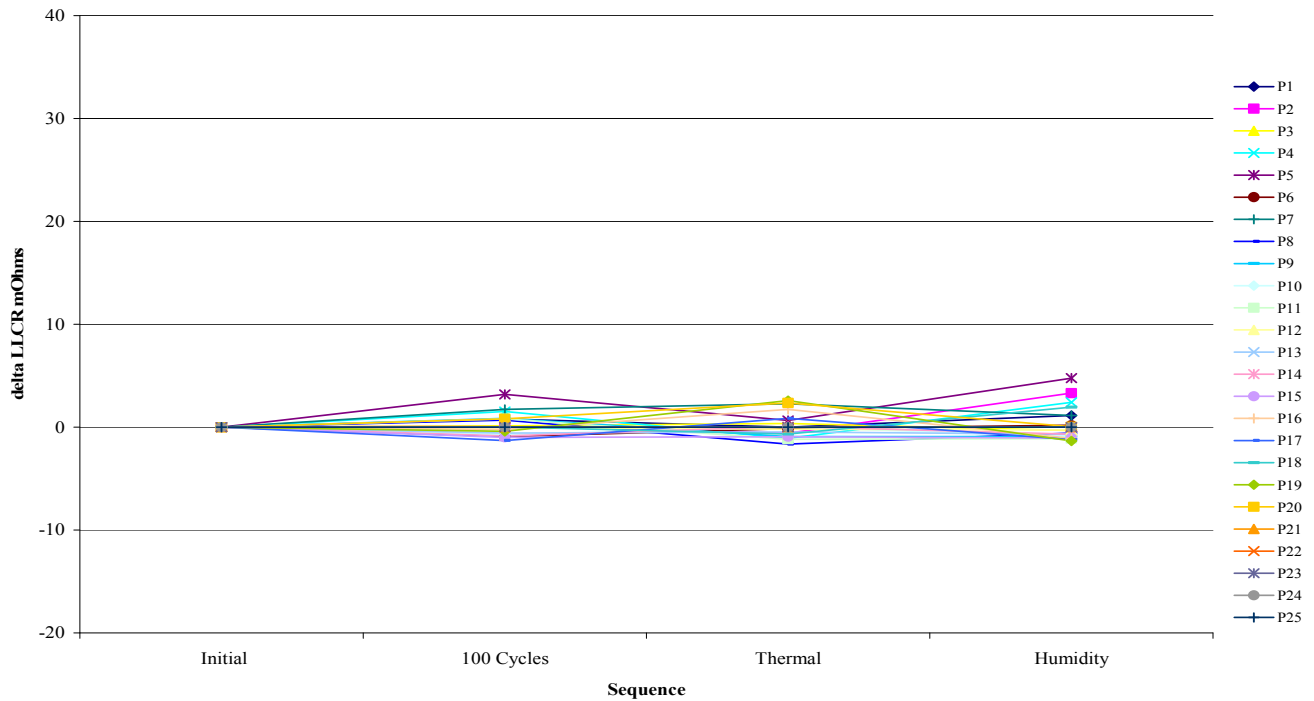


DATA SUMMARIES Continued

Board #6

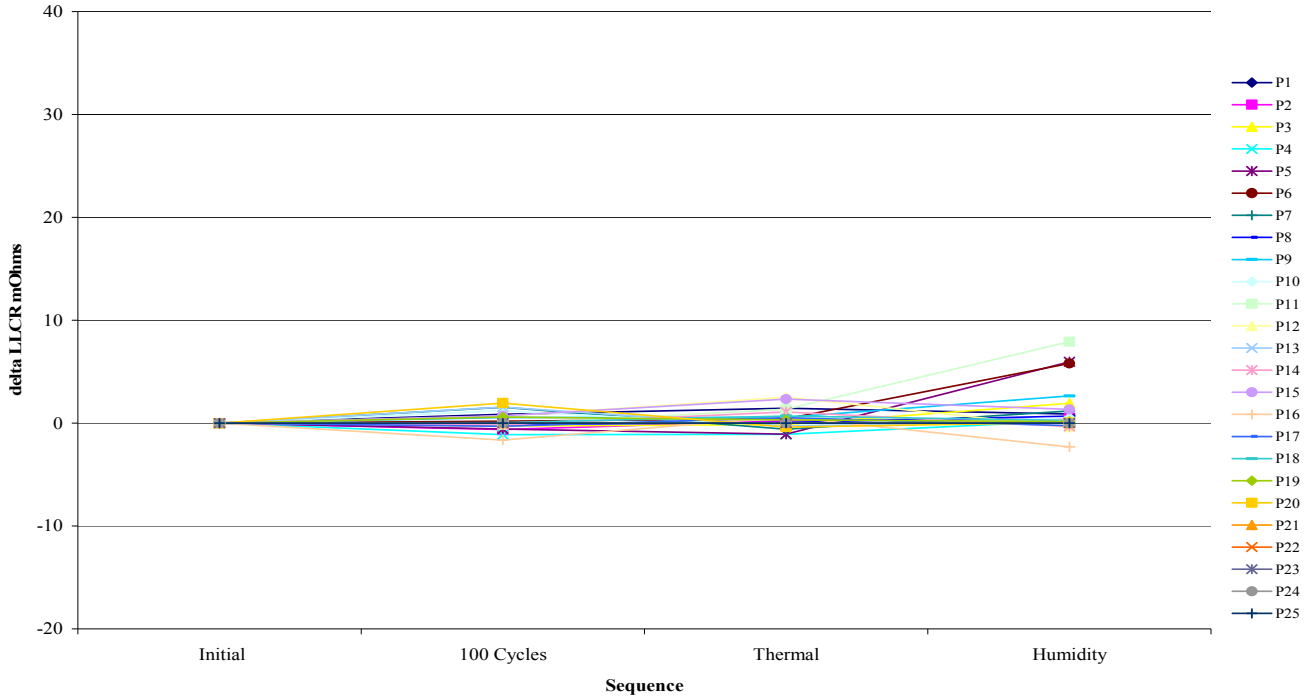


Board #7



DATA SUMMARIES Continued

Board #8



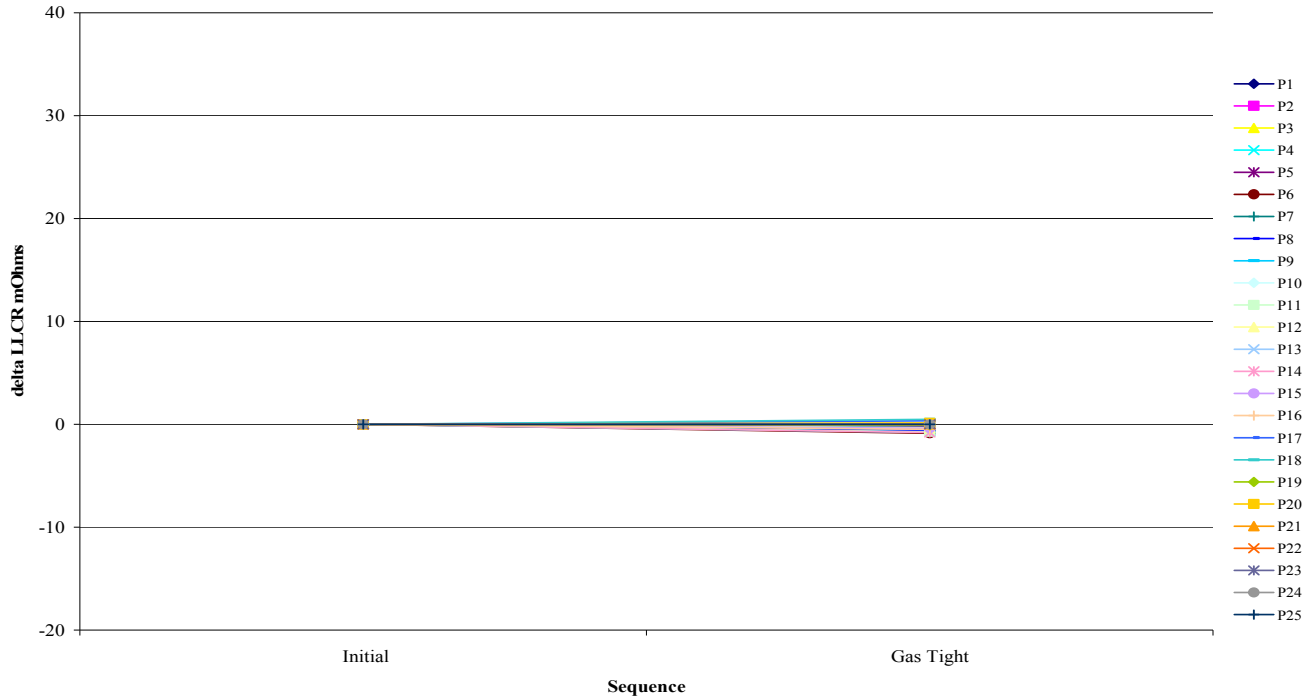
GAS TIGHT:

- 1) A total of 160 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. $\leq +5.0$ 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

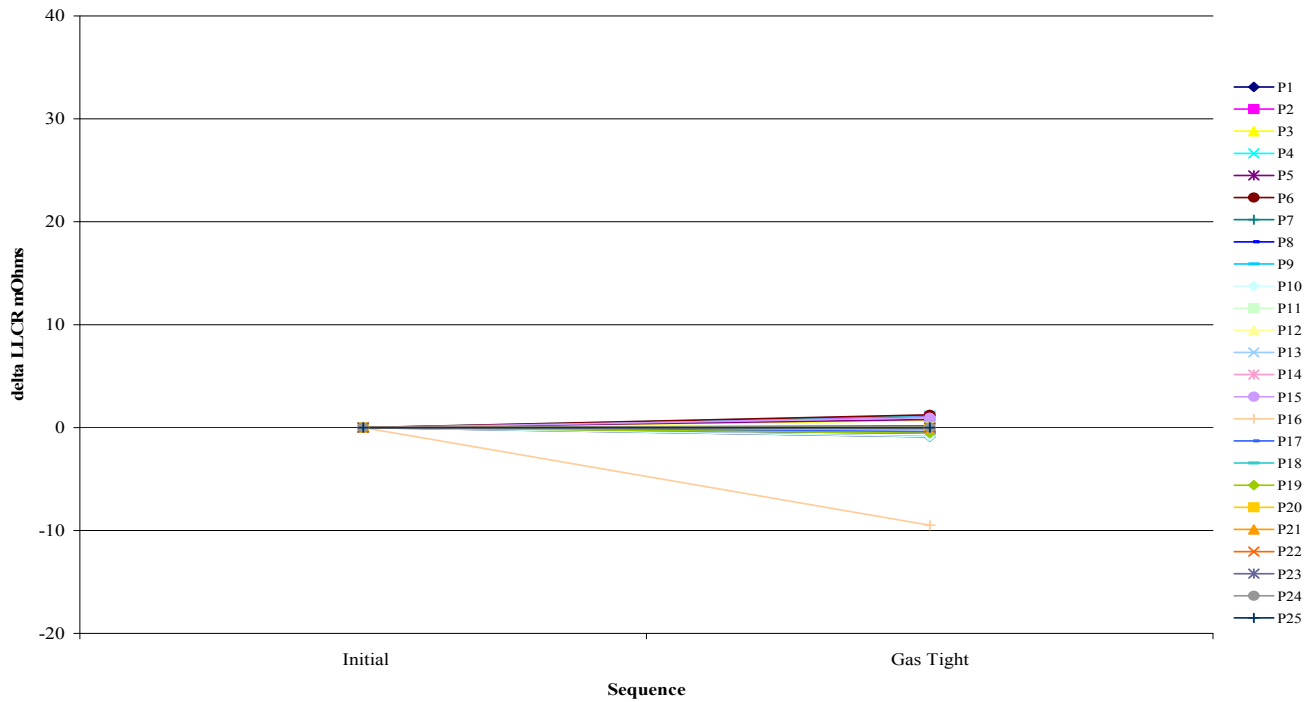
Date	Dec. 13 2005	Dec. 14 2005
Room Temp C	23	23
RH	19%	21%
Name	Troy Cook	Troy Cook
mOhm values	Actual Initial	Delta Gas Tight
Average	5.5	-0.3
St. Dev.	1.0	1.0
Min	3.5	-9.5
Max	9.1	2.1
Count	160	160

DATA SUMMARIES Continued

Board #1

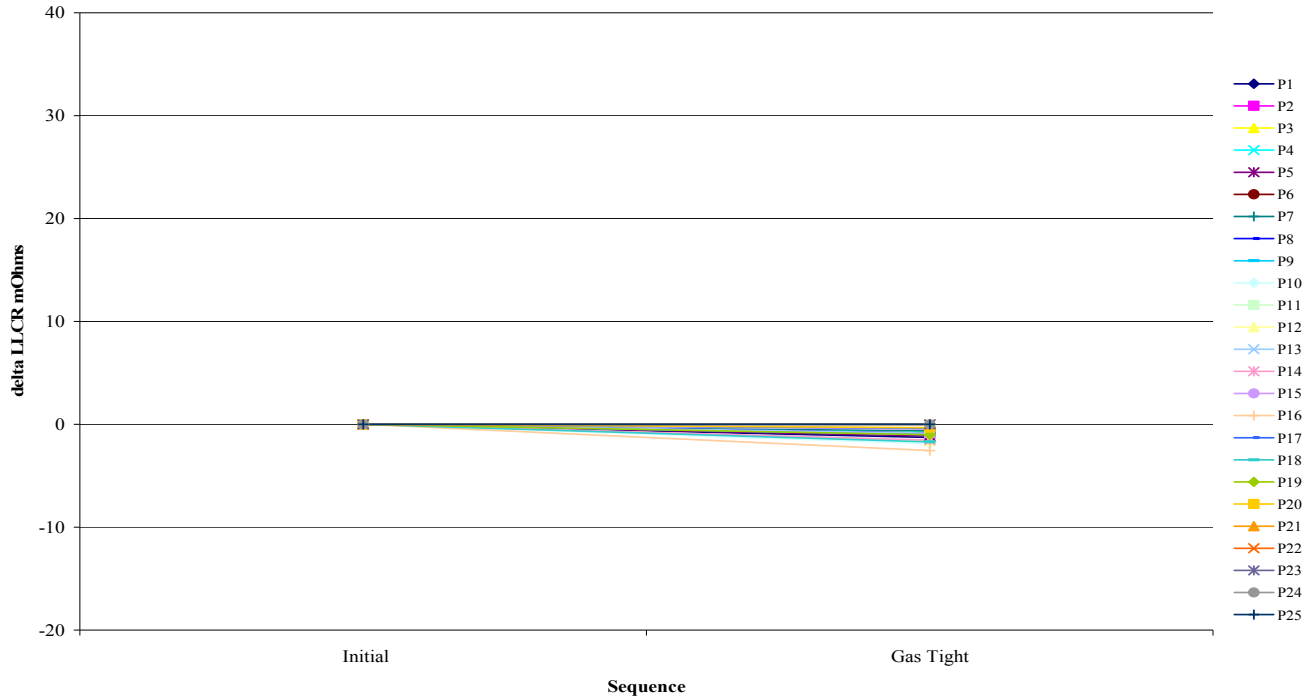


Board #2

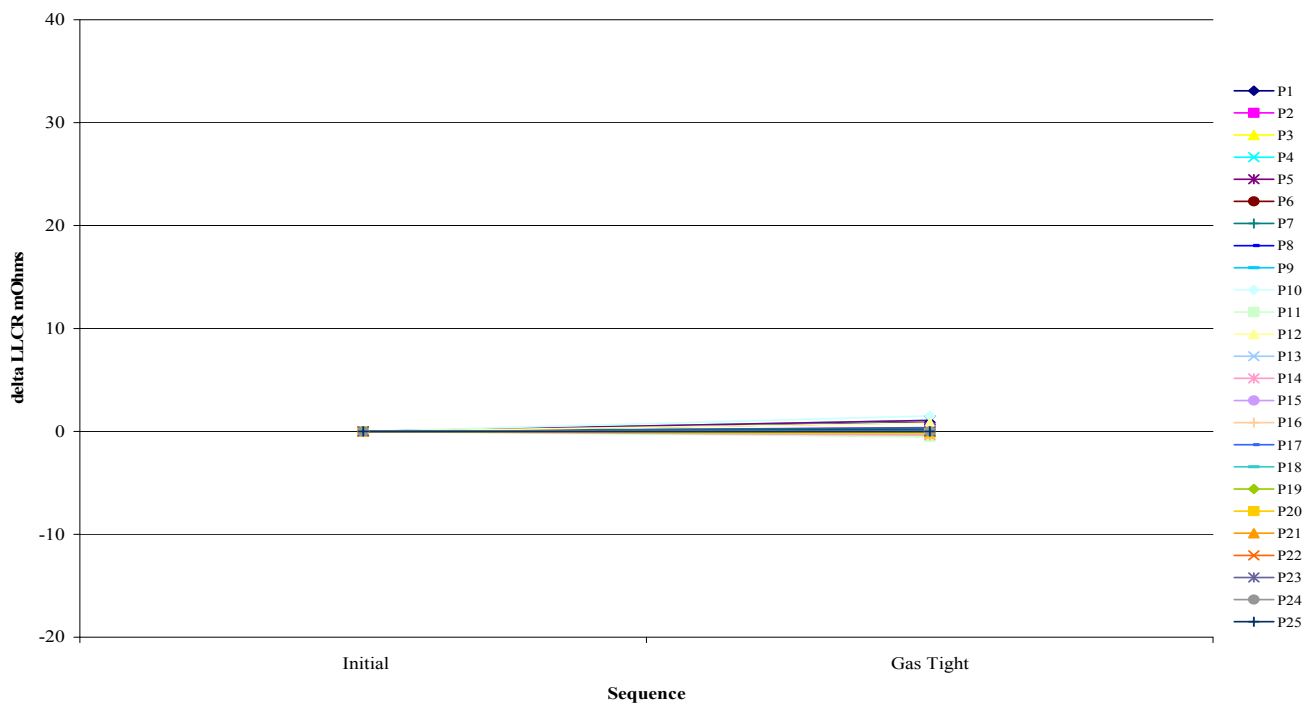


DATA SUMMARIES Continued

Board #3

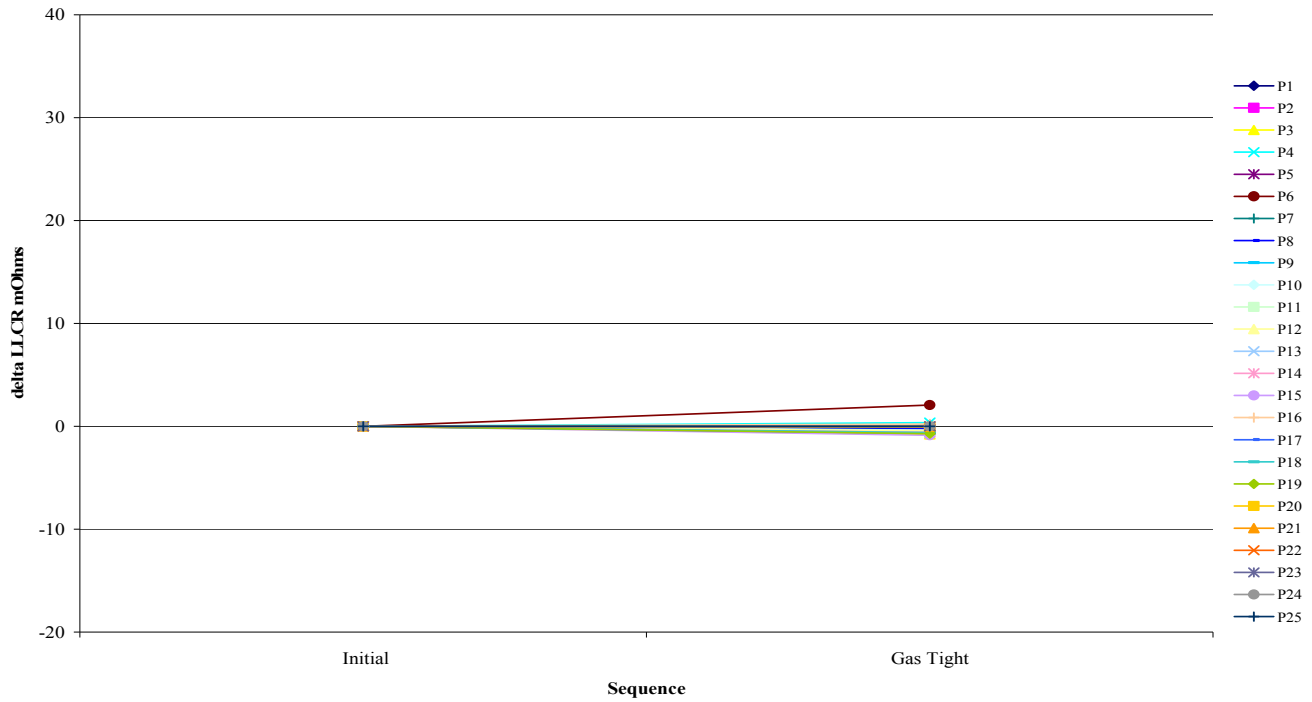


Board #4

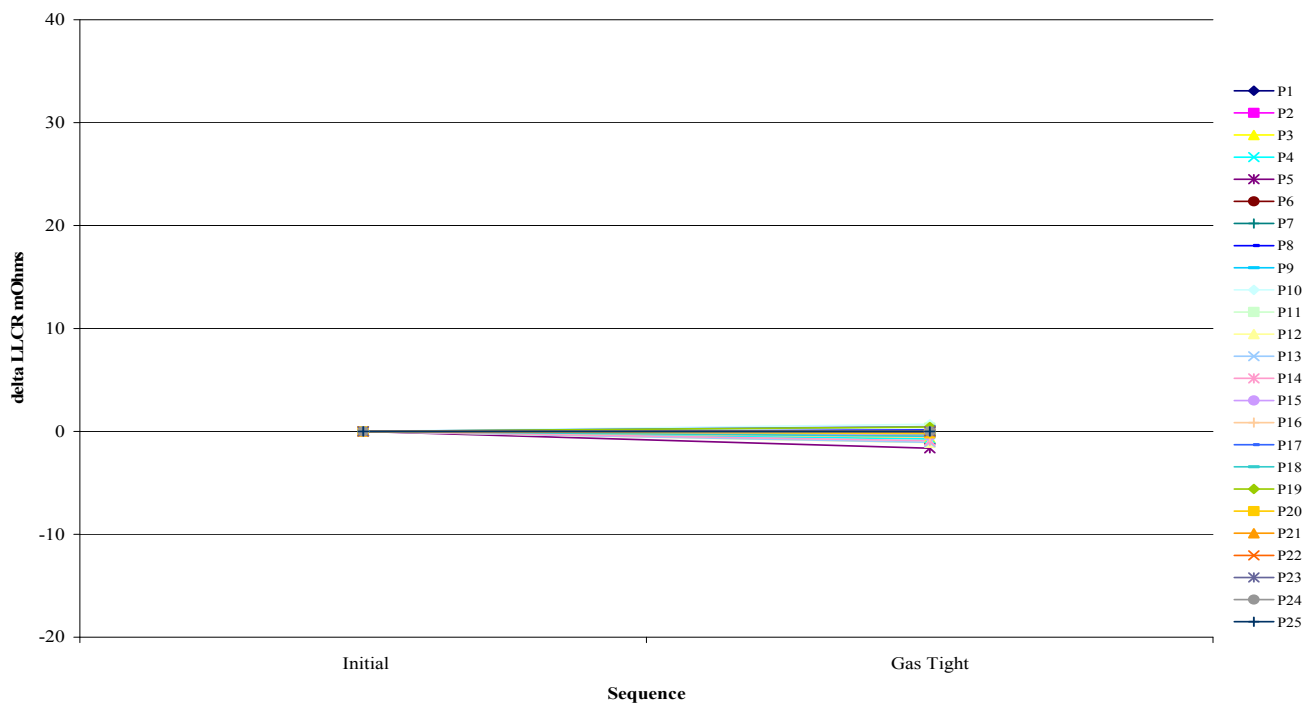


DATA SUMMARIES Continued

Board #5

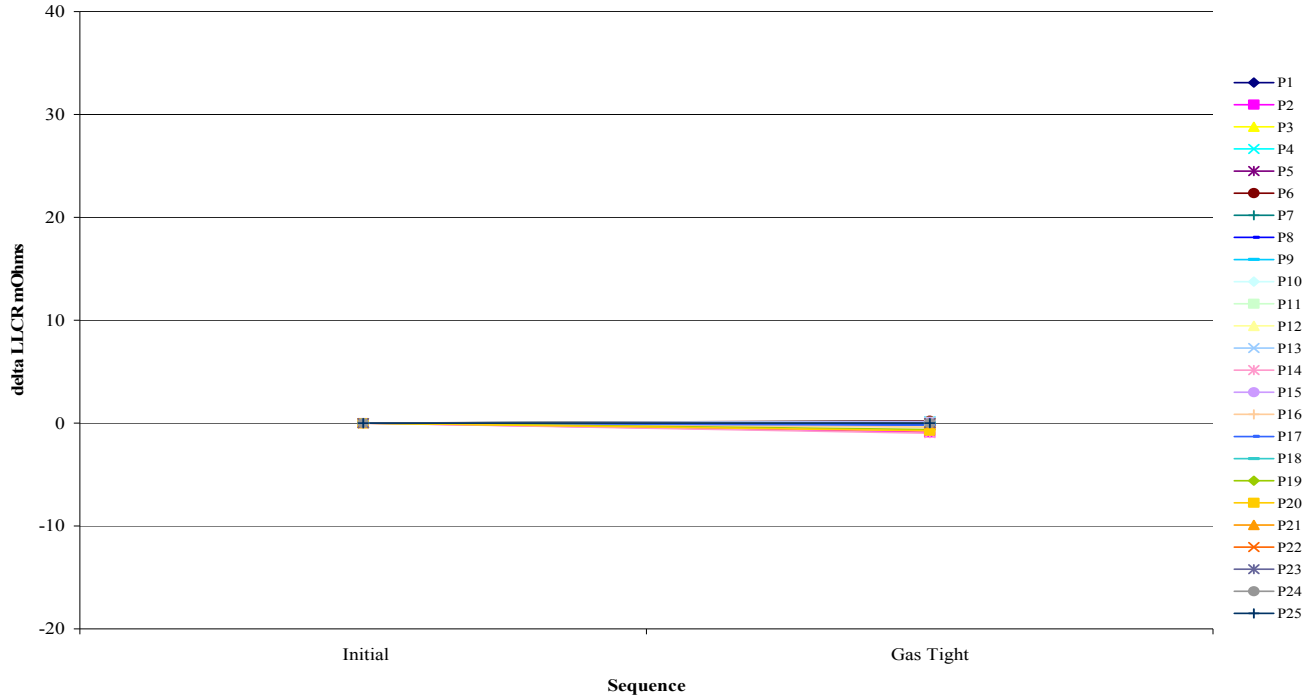


Board #6

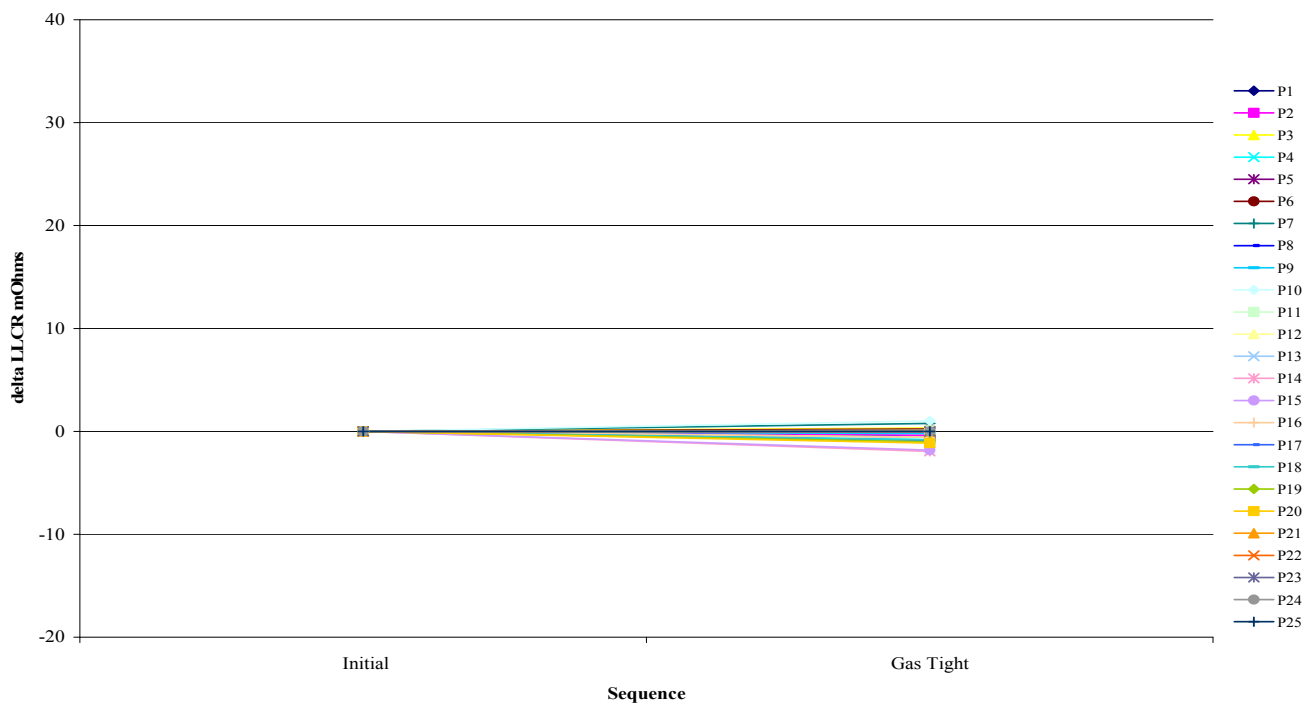


DATA SUMMARIES Continued

Board #7



Board #8



DATA**CONTACT HEIGHT:**

Sample#	Initial					After 100 Cycles				
	B1	B2	B3	B4	B5	B1	B2	B3	B4	B5
1	0.0316	0.0316	0.0316	0.0316	0.0316	0.0315	0.0315	0.0315	0.0316	0.0316
2	0.0313	0.0314	0.0314	0.0314	0.0313	0.0314	0.0313	0.0313	0.0313	0.0313
3	0.0314	0.0314	0.0314	0.0313	0.0314	0.0314	0.0314	0.0314	0.0314	0.0314
4	0.0314	0.0313	0.0314	0.0313	0.0313	0.0313	0.0313	0.0313	0.0314	0.0313
5	0.0314	0.0314	0.0314	0.0314	0.0314	0.0313	0.0314	0.0314	0.0314	0.0314
6	0.0316	0.0316	0.0316	0.0316	0.0316	0.0316	0.0316	0.0316	0.0316	0.0316
7	0.0313	0.0313	0.0314	0.0313	0.0314	0.0314	0.0313	0.0313	0.0313	0.0314
8	0.0314	0.0313	0.0314	0.0313	0.0314	0.0313	0.0314	0.0314	0.0314	0.0314
9	0.0313	0.0313	0.0314	0.0313	0.0313	0.0313	0.0313	0.0313	0.0314	0.0313
10	0.0313	0.0314	0.0314	0.0314	0.0314	0.0313	0.0314	0.0314	0.0313	0.0315
11	0.0306	0.0306	0.0306	0.0306	0.0306	0.0305	0.0306	0.0305	0.0305	0.0306
12	0.0305	0.0305	0.0306	0.0304	0.0306	0.0306	0.0305	0.0305	0.0305	0.0304
13	0.0306	0.0305	0.0305	0.0306	0.0306	0.0306	0.0305	0.0305	0.0305	0.0306
14	0.0306	0.0306	0.0305	0.0305	0.0305	0.0306	0.0306	0.0305	0.0305	0.0305
15	0.0305	0.0305	0.0306	0.0305	0.0305	0.0305	0.0306	0.0306	0.0305	0.0306
16	0.0307	0.0308	0.0308	0.0308	0.0308	0.0307	0.0308	0.0308	0.0307	0.0307
17	0.0305	0.0305	0.0306	0.0305	0.0306	0.0305	0.0305	0.0305	0.0305	0.0304
18	0.0306	0.0305	0.0305	0.0306	0.0305	0.0305	0.0305	0.0305	0.0305	0.0305
19	0.0306	0.0305	0.0305	0.0305	0.0305	0.0306	0.0306	0.0305	0.0306	0.0305
20	0.0305	0.0305	0.0306	0.0306	0.0305	0.0305	0.0306	0.0306	0.0305	0.0305

Sample#	After Thermals					After Humidity				
	B1	B2	B3	B4	B5	B1	B2	B3	B4	B5
1	0.0315	0.0316	0.0315	0.0315	0.0316	0.0316	0.0318	0.0319	0.0320	0.0323
2	0.0314	0.0314	0.0314	0.0314	0.0315	0.0312	0.0313	0.0313	0.0313	0.0313
3	0.0313	0.0313	0.0313	0.0313	0.0313	0.0314	0.0314	0.0314	0.0314	0.0314
4	0.0314	0.0314	0.0314	0.0314	0.0315	0.0314	0.0312	0.0313	0.0313	0.0314
5	0.0313	0.0314	0.0313	0.0313	0.0313	0.0313	0.0314	0.0314	0.0314	0.0314
6	0.0315	0.0316	0.0314	0.0315	0.0316	0.0316	0.0316	0.0316	0.0316	0.0316
7	0.0313	0.0314	0.0314	0.0314	0.0315	0.0312	0.0314	0.0313	0.0314	0.0313
8	0.0313	0.0313	0.0312	0.0313	0.0314	0.0314	0.0313	0.0314	0.0314	0.0314
9	0.0314	0.0314	0.0314	0.0314	0.0314	0.0314	0.0313	0.0313	0.0313	0.0313
10	0.0312	0.0313	0.0314	0.0313	0.0313	0.0313	0.0314	0.0314	0.0314	0.0314
11	0.0305	0.0305	0.0306	0.0305	0.0306	0.0306	0.0306	0.0305	0.0305	0.0306
12	0.0306	0.0306	0.0306	0.0306	0.0306	0.0306	0.0306	0.0305	0.0305	0.0305
13	0.0306	0.0306	0.0305	0.0305	0.0305	0.0306	0.0306	0.0306	0.0305	0.0306
14	0.0306	0.0305	0.0306	0.0306	0.0306	0.0306	0.0305	0.0305	0.0305	0.0305
15	0.0305	0.0305	0.0305	0.0305	0.0305	0.0305	0.0306	0.0306	0.0306	0.0306
16	0.0307	0.0307	0.0307	0.0307	0.0307	0.0308	0.0308	0.0308	0.0308	0.0308
17	0.0306	0.0306	0.0306	0.0306	0.0306	0.0305	0.0306	0.0305	0.0304	0.0305
18	0.0305	0.0306	0.0305	0.0305	0.0305	0.0306	0.0306	0.0306	0.0306	0.0305
19	0.0306	0.0305	0.0306	0.0306	0.0306	0.0306	0.0305	0.0305	0.0304	0.0305
20	0.0306	0.0304	0.0305	0.0305	0.0305	0.0306	0.0306	0.0306	0.0305	0.0306

DATA Continued**NORMAL FORCE (FOR CONTACTS TESTED IN THE HOUSING):**

Initial	Deflections in inches Forces in Grams					
Sample #	0.0050	0.0110	0.0180	0.0250	0.0310	SET
1	44.40	50.60	61.50	66.30	73.10	0.00000
2	42.50	49.80	59.80	67.70	74.40	0.00030
3	36.00	44.90	55.50	65.50	71.20	0.00020
4	42.80	53.90	62.00	73.40	78.50	0.00030
5	35.20	42.20	56.00	70.10	76.90	0.00000
6	43.60	51.40	57.70	70.40	77.40	0.00020
7	40.30	49.00	56.90	70.70	79.90	0.00030

Thermals	Deflections in inches Forces in Grams					
Sample #	0.0050	0.0110	0.0180	0.0250	0.0310	SET
1	35.20	42.80	55.20	63.90	73.10	0.00010
2	31.10	40.90	52.80	62.30	71.50	0.00020
3	35.20	43.60	53.90	64.20	71.50	0.00030
4	35.50	45.80	55.80	65.20	75.80	0.00020
5	32.50	39.80	51.40	60.60	69.30	0.00000
6	31.40	39.80	49.30	58.50	67.10	0.00000
7	36.60	45.80	56.00	66.10	75.00	0.00020
8	32.20	44.10	55.20	66.10	76.30	0.00000

INSULATION RESISTANCE (IR):

Sample #	Initial, Meg Ohms	
	Mated	Unmated
	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>
P-P#1	100000	100000
P-P#2	100000	100000
R-R	100000	100000

Sample #	Thermal, Meg Ohms	
	Mated	Unmated
	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>
P-P#1	100000	15000
P-P#2	100000	100000
R-R	100000	100000

Sample #	Humidity, Meg Ohms	
	Mated	Unmated
	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>
P-P#1	100000	100000
P-P#2	100000	100000
R-R	100000	100000

DATA Continued**DIELECTRIC WITHSTANDING VOLTAGE (DWV):**

	Initial, VAC Mated			Initial, VAC Unmated		
	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>
P-P#1	1500	1125	375			
P-P#2				1600	1200	400
R-R	1600	1200	400			

	Thermal, VAC Mated			Thermal, VAC Unmated		
	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>
P-P#1	1800	1350	450			
P-P#2				1600	1200	400
R-R	1900	1425	475			

	Humidity, VAC Mated			Humidity, VAC Unmated		
	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>
P-P#1	1600	1200	400			
P-P#2				1900	1425	475
R-R	1700	1275	425			

LLCR:

Date	Nov. 16 2005	Nov. 18 2005	Nov. 30 2005	Dec. 13 2005
Room Temp C	23	23	23	23
RH	32%	43%	22%	13%
Name	Troy Cook	Troy Cook	Troy Cook	Troy Cook
mOhm values	Actual	Delta	Delta	Delta
	Initial	100 Cycles	Thermal	Humidity
Average	5.0	-0.1	0.1	0.3
St. Dev.	0.7	0.8	1.1	1.6
Min	3.7	-2.7	-2.1	-2.3
Max	7.3	3.2	3.4	8.5
Count	160	160	160	160

mOhm values		Actual	Delta	Delta	Delta
Board	Position	Initial	100 Cycles	Thermal	Humidity
1	P1	4.4	0.8	1.3	-0.2

Tracking Code: TC0544--0868

Part #: PGP-105-01-G-D-AD

Part description: pogo pin connector

1	P2	5.6	-0.2	-0.9	1.1
1	P3	5.1	0.0	0.8	0.2
1	P4	4.9	0.1	2.8	2.1
1	P5	4.4	-0.5	0.3	-0.7
1	P6	4.7	-0.2	0.0	-0.1
1	P7	4.5	0.3	0.9	-0.5
1	P8	4.1	0.0	1.9	-0.1
1	P9	4.6	-0.7	2.1	-0.7
1	P10	4.1	-0.1	0.8	0.8
1	P11	4.3	-0.4	0.4	0.3
1	P12	6.7	-0.7	-2.0	2.2
1	P13	4.9	0.8	-0.4	-0.2
1	P14	4.2	-0.1	0.4	1.7
1	P15	5.2	-0.4	0.1	-0.2
1	P16	4.5	0.4	-0.6	-0.2
1	P17	7.3	-1.4	-1.8	-1.5
1	P18	4.8	0.2	0.9	0.2
1	P19	5.3	-0.5	2.9	-1.4
1	P20	6.2	-0.5	-1.1	-2.0
2	P1	4.0	0.2	0.9	0.5
2	P2	6.1	-1.4	-1.2	-1.0
2	P3	4.4	-0.4	1.1	0.4
2	P4	5.7	1.7	-1.4	0.8
2	P5	4.2	-0.3	0.8	0.6
2	P6	4.8	0.7	-0.1	1.0
2	P7	4.1	0.2	1.1	0.3
2	P8	5.9	-0.1	-1.5	4.5
2	P9	4.3	0.3	0.2	1.9
2	P10	4.8	0.2	0.2	1.0
2	P11	5.0	0.3	-0.3	0.0
2	P12	4.1	-0.4	0.0	0.5
2	P13	4.2	0.0	2.2	0.5
2	P14	5.1	0.5	-0.6	0.0
2	P15	5.3	-0.1	0.5	0.0
2	P16	4.7	0.1	-0.5	1.0
2	P17	5.7	-1.2	0.0	-1.1
2	P18	4.6	0.6	-0.1	1.3
2	P19	4.7	0.0	-0.1	0.1
2	P20	4.2	0.3	-0.5	0.4
3	P1	4.8	-1.0	-0.5	-0.5
3	P2	5.0	-0.4	0.2	0.0
3	P3	4.5	1.6	0.3	1.4
3	P4	4.1	-0.6	0.4	-0.3
3	P5	4.6	-0.1	0.1	0.7
3	P6	4.5	0.2	0.6	0.2
3	P7	5.5	-0.2	0.1	1.3
3	P8	6.2	-2.7	-1.9	-1.1
3	P9	5.0	-0.3	-0.5	2.0
3	P10	4.8	-0.6	-0.3	0.4
3	P11	5.2	-0.7	0.0	-0.6

Tracking Code: TC0544--0868

Part #: PGP-105-01-G-D-AD

Part description: pogo pin connector

3	P12	5.1	-0.8	0.4	1.1
3	P13	4.8	-0.6	0.6	0.0
3	P14	4.8	-0.1	1.0	0.0
3	P15	6.6	0.2	-2.0	-1.2
3	P16	5.4	0.2	-0.6	-0.5
3	P17	4.8	-0.9	-0.2	-1.1
3	P18	5.3	1.6	1.6	-0.7
3	P19	4.5	-0.4	1.3	0.4
3	P20	4.8	-0.1	2.2	-0.7
4	P1	4.6	0.1	-0.5	-0.6
4	P2	4.2	0.1	2.6	0.5
4	P3	6.4	-1.5	-1.0	-1.9
4	P4	4.9	1.2	1.9	3.4
4	P5	6.0	-0.3	-2.0	-0.4
4	P6	6.6	-0.8	-2.1	8.5
4	P7	5.0	-0.8	-0.5	5.8
4	P8	5.6	-0.1	-1.3	-1.3
4	P9	5.1	-0.5	0.2	0.6
4	P10	6.8	-2.3	-1.8	-1.9
4	P11	6.5	-0.7	-1.5	-0.9
4	P12	5.5	-0.8	-0.9	0.0
4	P13	4.8	-0.6	-0.5	-0.3
4	P14	4.4	0.4	-0.3	0.1
4	P15	4.2	0.4	1.1	0.4
4	P16	4.8	-0.4	1.8	-1.1
4	P17	4.7	0.3	1.6	1.2
4	P18	6.8	-0.6	-1.7	-1.2
4	P19	6.3	-1.1	-1.3	-1.3
4	P20	4.6	-0.6	-0.1	-0.5
5	P1	4.8	-0.7	0.3	-0.1
5	P2	4.9	-0.5	1.0	-0.4
5	P3	4.7	-0.4	0.1	-0.5
5	P4	4.2	0.1	3.4	-0.5
5	P5	5.1	-0.5	-1.1	-0.3
5	P6	5.1	-0.2	0.3	-0.1
5	P7	4.8	-0.6	0.0	-0.5
5	P8	4.8	-0.4	0.7	-0.4
5	P9	4.0	0.7	2.0	0.0
5	P10	4.6	-0.8	-0.1	-0.5
5	P11	4.9	-0.6	-0.5	-0.5
5	P12	5.7	-1.0	-0.9	0.9
5	P13	4.4	2.5	-0.2	1.5
5	P14	5.1	0.1	-1.0	0.3
5	P15	4.7	1.3	0.4	1.5
5	P16	4.1	0.1	1.8	-0.4
5	P17	4.4	0.1	0.0	-0.3
5	P18	5.2	-1.0	-1.0	-0.2
5	P19	4.4	0.1	0.1	0.4
5	P20	3.9	0.3	0.1	0.2
6	P1	4.8	0.4	0.3	0.0

Tracking Code: TC0544--0868

Part #: PGP-105-01-G-D-AD

Part description: pogo pin connector

6	P2	4.7	-0.3	-0.3	-0.8
6	P3	5.2	-0.4	-0.1	-0.9
6	P4	4.7	0.4	0.7	-0.1
6	P5	5.1	-0.1	-0.2	-0.8
6	P6	6.2	-1.4	-1.7	-1.2
6	P7	5.1	0.4	-0.6	3.2
6	P8	5.0	-0.4	0.2	0.6
6	P9	4.2	0.1	0.7	-0.1
6	P10	5.5	1.0	-1.2	-1.0
6	P11	5.4	-0.2	-0.5	-1.4
6	P12	5.1	-0.8	-0.6	0.7
6	P13	5.0	0.7	-0.1	-0.1
6	P14	4.6	0.2	1.5	0.5
6	P15	5.7	-0.8	-1.5	-0.8
6	P16	5.2	-0.1	-0.5	-0.3
6	P17	6.9	-1.7	-2.1	-0.8
6	P18	5.6	-0.7	-1.4	-0.2
6	P19	5.1	-0.6	-1.2	-0.5
6	P20	5.2	0.1	-0.6	-0.3
7	P1	4.6	0.8	0.0	1.1
7	P2	4.4	0.1	-0.6	3.3
7	P3	4.0	0.1	0.4	-0.3
7	P4	5.3	1.5	-1.1	2.4
7	P5	4.1	3.2	0.6	4.8
7	P6	4.6	-0.9	-0.1	0.2
7	P7	4.8	1.7	2.3	1.1
7	P8	6.2	0.7	-1.6	-0.6
7	P9	5.3	0.8	-0.9	-0.9
7	P10	4.6	-0.7	0.0	-0.9
7	P11	5.2	0.8	-1.2	-1.1
7	P12	4.9	0.0	-0.2	-0.3
7	P13	5.0	-0.6	-0.5	-0.7
7	P14	5.3	-0.9	0.1	-0.7
7	P15	5.3	-1.0	-0.9	-1.1
7	P16	5.7	-0.2	1.7	-1.1
7	P17	5.2	-1.3	0.9	-1.2
7	P18	5.0	0.0	-0.7	2.0
7	P19	5.0	-0.4	2.6	-1.3
7	P20	4.7	0.8	2.4	0.0
8	P1	3.7	0.8	1.5	0.9
8	P2	4.8	-0.6	0.2	0.5
8	P3	4.6	-0.3	-0.2	1.9
8	P4	6.2	-1.1	-1.1	0.2
8	P5	6.4	-0.6	-1.1	6.0
8	P6	4.9	0.2	0.4	5.8
8	P7	4.6	1.5	-0.6	1.2
8	P8	4.8	-0.2	0.1	0.7
8	P9	4.9	0.5	0.6	2.6
8	P10	4.6	1.2	-0.3	0.5
8	P11	4.4	-0.2	1.4	7.9

Tracking Code: TC0544--0868

Part #: PGP-105-01-G-D-AD

Part description: pogo pin connector

8	P12	5.1	0.7	2.5	-0.4
8	P13	4.8	1.6	-0.3	0.1
8	P14	4.3	-0.2	1.1	-0.3
8	P15	5.2	0.7	2.3	1.3
8	P16	6.3	-1.6	0.6	-2.3
8	P17	5.1	-0.3	0.5	-0.3
8	P18	4.1	0.0	0.7	0.3
8	P19	5.0	0.6	0.3	0.2
8	P20	4.8	1.9	-0.4	0.1

DATA Continued**GAS TIGHT:**

Date	Dec. 13 2005	Dec. 14 2005
Room Temp C	23	23
RH	19%	21%
Name	Troy Cook	Troy Cook
mOhm values	Actual Initial	Delta Gas Tight
Average	5.5	-0.3
St. Dev.	1.0	1.0
Min	3.5	-9.5
Max	9.1	2.1
Count	160	160

mOhm values		Actual	Delta
Board	Position	Initial	Gas Tight
1	P1	4.7	-0.4
1	P2	5.4	-0.5
1	P3	3.5	0.1
1	P4	4.9	-0.7
1	P5	6.2	-0.2
1	P6	5.3	-0.9
1	P7	5.1	-0.3
1	P8	5.0	-0.7
1	P9	6.2	-0.8
1	P10	4.7	-0.3
1	P11	5.9	-0.7
1	P12	4.9	-0.4
1	P13	6.4	0.0
1	P14	5.8	-0.8
1	P15	5.0	-0.4
1	P16	5.7	-0.5
1	P17	4.3	0.3
1	P18	4.8	0.5
1	P19	4.6	-0.1
1	P20	4.4	0.1
2	P1	6.3	-0.9
2	P2	6.1	1.1
2	P3	5.4	0.7
2	P4	9.1	1.2
2	P5	5.5	0.8
2	P6	5.1	1.2
2	P7	4.8	0.2
2	P8	6.6	-0.5
2	P9	5.0	-0.1

Tracking Code: TC0544--0868

Part #: PGP-105-01-G-D-AD

Part description: pogo pin connector

2	P10	8.7	-0.9
2	P11	5.6	0.1
2	P12	5.8	-0.1
2	P13	5.2	0.0
2	P14	4.9	-0.1
2	P15	4.2	1.0
2	P16	4.1	-9.5
2	P17	6.6	-0.4
2	P18	5.1	-0.1
2	P19	5.4	-0.5
2	P20	5.4	0.0
3	P1	5.6	-1.3
3	P2	5.4	-0.9
3	P3	6.1	-0.7
3	P4	5.1	-0.6
3	P5	6.2	-1.1
3	P6	6.2	-0.9
3	P7	4.6	-0.6
3	P8	6.8	-0.9
3	P9	5.0	-1.0
3	P10	6.9	-1.9
3	P11	4.2	-0.5
3	P12	7.7	-1.6
3	P13	6.1	-0.9
3	P14	7.3	-1.5
3	P15	5.1	-0.5
3	P16	7.3	-2.6
3	P17	5.5	-0.4
3	P18	5.5	-1.7
3	P19	6.4	-1.0
3	P20	5.3	-0.3
4	P1	5.5	0.9
4	P2	5.4	0.4
4	P3	6.1	0.1
4	P4	5.1	1.1
4	P5	6.3	1.1
4	P6	6.8	0.2
4	P7	4.5	0.3
4	P8	4.0	0.1
4	P9	5.4	0.1
4	P10	6.1	1.5
4	P11	6.4	-0.5
4	P12	5.5	0.8
4	P13	4.8	-0.1
4	P14	5.1	-0.4
4	P15	5.1	0.0
4	P16	4.9	-0.1
4	P17	4.4	-0.1
4	P18	5.7	-0.2
4	P19	5.3	-0.2

Tracking Code: TC0544--0868

Part #: PGP-105-01-G-D-AD

Part description: pogo pin connector

4	P20	4.9	-0.2
5	P1	5.1	0.1
5	P2	4.9	-0.3
5	P3	5.6	-0.8
5	P4	5.1	0.4
5	P5	5.0	-0.2
5	P6	4.3	2.1
5	P7	5.0	-0.2
5	P8	5.3	-0.2
5	P9	6.7	-0.5
5	P10	5.5	-0.4
5	P11	4.9	-0.4
5	P12	5.9	-0.5
5	P13	7.2	0.0
5	P14	5.2	-0.6
5	P15	6.3	-0.9
5	P16	5.5	0.2
5	P17	5.5	-0.7
5	P18	6.4	-0.6
5	P19	6.0	-0.7
5	P20	6.2	-0.1
6	P1	4.8	-0.4
6	P2	5.4	-0.1
6	P3	4.5	-0.7
6	P4	6.0	-0.7
6	P5	8.8	-1.6
6	P6	4.3	-0.1
6	P7	4.9	-0.3
6	P8	4.8	0.1
6	P9	4.5	-0.3
6	P10	5.7	0.7
6	P11	4.7	0.4
6	P12	6.0	-1.1
6	P13	7.7	-1.1
6	P14	6.2	-0.9
6	P15	5.7	-0.4
6	P16	5.7	-0.6
6	P17	4.7	0.5
6	P18	5.7	-0.5
6	P19	6.7	0.4
6	P20	6.3	-0.2
7	P1	3.8	0.2
7	P2	6.9	-0.9
7	P3	6.4	-0.3
7	P4	4.2	0.2
7	P5	4.4	0.0
7	P6	3.8	0.2
7	P7	4.5	-0.2
7	P8	5.0	-0.2
7	P9	4.5	0.1

Tracking Code: TC0544--0868

Part #: PGP-105-01-G-D-AD

Part description: pogo pin connector

7	P10	4.9	-0.3
7	P11	4.6	0.1
7	P12	4.8	-0.4
7	P13	4.9	0.2
7	P14	6.2	-1.0
7	P15	6.1	0.1
7	P16	4.4	-0.4
7	P17	5.3	-0.2
7	P18	5.2	0.0
7	P19	5.5	-0.6
7	P20	6.1	-0.8
8	P1	5.0	-0.5
8	P2	5.0	-0.4
8	P3	4.8	0.3
8	P4	4.8	-0.8
8	P5	5.0	-0.1
8	P6	4.2	0.2
8	P7	5.0	0.8
8	P8	5.4	-0.5
8	P9	4.3	-0.2
8	P10	4.9	1.0
8	P11	5.3	0.1
8	P12	5.8	-0.6
8	P13	5.9	0.0
8	P14	8.5	-2.0
8	P15	7.1	-1.8
8	P16	4.9	-0.6
8	P17	5.8	-0.9
8	P18	6.5	-0.8
8	P19	6.7	-1.0
8	P20	5.2	-1.1

EQUIPMENT AND CALIBRATION SCHEDULES**Equipment #:** THL-02**Description:** Temperature/Humidity Chart Recorder**Manufacturer:** Dickson**Model:** THDX**Serial #:** 00120351**Accuracy:** Temp: +/- 1C; Humidity: +/-2% RH (0 - 60%) +/- 3% RH (61 - 95%).

... Last Cal: 06/16/05, Next Cal: 06/16/06

Equipment #: MO-02**Description:** Multimeter /Data Acquisition System**Manufacturer:** Keithley**Model:** 2700**Serial #:** 0780546**Accuracy:** See Manual

... Last Cal: 05/12/05, Next Cal: 05/12/06

Equipment #: PS-01**Description:** System Power Supply**Manufacturer:** Hewlett Packard**Model:** HP 6033A**Serial #:** (HP) 3329A-07330**Accuracy:** See Manual

... Last Cal: 05/12/05, Next Cal: 05/12/06

Equipment #: TC090601-103/105**Description:** IC Thermocouple-103/105**Manufacturer:** Samtec**Model:****Serial #:** TC090601-103/105**Accuracy:** +/- 1 degree C

... Last Cal: , Next Cal:

Equipment #: TCT-01**Description:** Test Stand**Manufacturer:** Chatillon**Model:** TCD-1000**Serial #:** 05 23 00 02**Accuracy:** Speed Accuracy: +/-5% of max speed; Displacement: +/- .5% or +/- .005, whichever is greater.

... Last Cal: 6/23/05, Next Cal: 6/23/06

Equipment #: OV-03**Description:** Cascade Tek Forced Air Oven**Manufacturer:** Cascade Tek**Model:** TFO-5**Serial #:** 0500100**Accuracy:** Temp. Stability: +/- .1C/C change in ambient Temp. Stability: +/- .1C/C change in ambient

... Last Cal: 05/12/05, Next Cal: 05/12/06

Equipment #: THC-01

Description: Temperature/Humidity Chamber

Manufacturer: Thermotron

Model: SM-8-7800

Serial #: 30676

Accuracy: See Manual

... Last Cal: 7/15/2005, Next Cal: 8/15/2006

Equipment #: OGP-01

Description: 6"X 6" Video Measuring Machine

Manufacturer: Optical Gauging Products

Model: Smartscope 200 CFOV

Serial #: SF2001956

Accuracy: See Manual

... Last Cal: 04/12/05, Next Cal: 04/12/06

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: 4/28/2005, Next Cal: 4/28/2006

Equipment #: LC-5N (icell)-2

Description: 5 Newton load cell for Dillon Quantrol test stand

Manufacturer: Dillon Quantrol

Model: icell

Serial #: 00120351

Accuracy: .10 % of capacity

... Last Cal: 4/19/2005, Next Cal: 4/19/2006

Equipment #: HPM-01

Description: Hipot Megommeter

Manufacturer: Hipotronics

Model: H306B-A

Serial #: M9905004

Accuracy: 2 % Full Scale Accuracy

... Last Cal: 5/12/05, Next Cal: 05/12/06

Equipment #: MO-01

Description: Micro-Ohmmeter

Manufacturer: Keithley

Model: 580

Serial #: 0772740

Accuracy: See Manual

... Last Cal: 05/12/05, Next Cal: 05/12/06

Tracking Code: TC0544--0868

Part #: PGP-105-01-G-D-AD

Part description: pogo pin connector

Equipment #: MO-03

Description: Multimeter /Data Acquisition System

Manufacturer: Keithley

Model: 2700

Serial #: 0791975

Accuracy: See Manual

... Last Cal: 05/12/05, Next Cal: 05/12/06

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