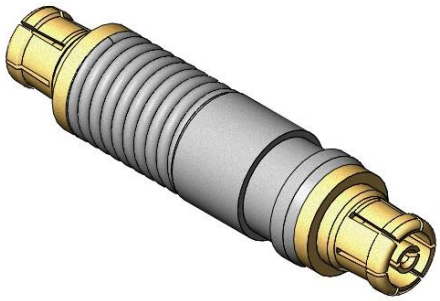
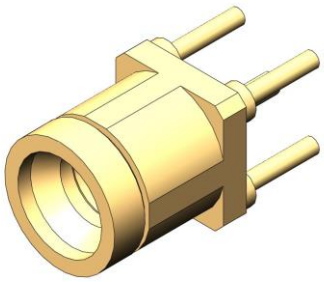
Project Number: Design Qualification Test Report	Tracking Code: 3387413_Report_Rev_1
Requested by: Iris Wang	Date: 2/27/2023
Part #: PRFIA-SMPM-J-J-SP-2/SMPM-PF-P-HG-ST-TH-1	Tech: Peter Chen
Part description: PRFIA / SMPM	Qty to test: 20
Test Start: 6/15/2022	Test Completed: 7/25/2022





DESIGN QUALIFICATION TEST REPORT

PRFIA / SMPM
PRFIA-SMPM-J-J-SP-2/SMPM-PF-P-HG-ST-TH-1

REVISION HISTORY

DATA	REV.NUM.	DESCRIPTION	ENG
2/23/2023	**1**	**Initial Issue**	**PC**

CERTIFICATION

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

SCOPE

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

APPLICABLE DOCUMENTS

Standards: EIA Publication 364 and MIL-STD.

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 IR_DWV 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 IR_DWV 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-109618-TST

FLOWCHARTS

Mating/Unmating/Durability

Note: Check signal and ground LLCR.

Group 1
PRFIA-SMPM-J-J-SP-2
SMPM-PF-P-HG-ST-TH-1
5 Assemblies
FULL DETENT TO BULLET
Note: CYCLE ONLY ONE SIDE OF CONNECTOR. FIXTURE CONNECTOR SO NO SPRING COMPRESSION OCCURS.

Step	Description
1.	Contact Gaps
2.	LLCR (2)
3.	Mating/Unmating Force (3) - Non Standard
4.	Cycles Quantity = 50 Cycles
5.	Mating/Unmating Force (3) - Non Standard
6.	Cycles Quantity = 50 Cycles
7.	Mating/Unmating Force (3) - Non Standard
8.	Contact Gaps
9.	LLCR (2) Max Delta = 15 mOhm
10.	Thermal Shock (5) - Non Standard
11.	LLCR (2) Max Delta = 15 mOhm

Group 2
PRFIA-SMPM-J-J-SP-2
SMPM-PF-P-HG-ST-TH-1
3 Assemblies
COMPRESSIONS

Step	Description
1.	INTERFACE GAGING MAX INTERFACE DEPTH = 0.003 " *Note: MEASURE C1 AND C2 ON PRINT. USE DROP GAGE.*
2.	LLCR (2)
3.	COMPRESSION CYCLES COMPRESSION CYCLES = 25 Cycles *Note: FULLY COMPRESS ASSEMBLY ALONG CENTER CONTACT AXIS, DISTANCE 0.098 in (2.4892mm).*
4.	LLCR (2) Max Delta = 15 mOhm
5.	Thermal Shock (5) - Non Standard
6.	Humidity (1)
7.	LLCR (2) Max Delta = 15 mOhm
8.	INTERFACE GAGING MAX INTERFACE DEPTH = 0.003 " *Note: MEASURE C1 AND C2 ON PRINT. USE DROP GAGE.*

Group 3
PRFIA-SMPM-J-J-SP-2
SMPM-PF-P-HG-ST-TH-1
5 Assemblies
PULL TO DESTRUCT

Step	Description
1.	Connector Pull *Note: PULL TO DESTRUCT. RETAIN SAMPLES FOR ENGINEERING ANALYSIS. (SEE ATTACHMENT)*

Group 4
PRFIA-SMPM-J-J-SP-2
SMPM-PS-P-HG-ST-TH-1
5 Assemblies
SMOOTH BORE TO BULLET
Note: CYCLE ONLY ONE SIDE OF CONNECTOR.

Step	Description
1.	Contact Gaps
2.	Mating/Unmating Force (4) - Non Standard
3.	Cycles Quantity = 250 Cycles
4.	Mating/Unmating Force (4) - Non Standard
5.	Cycles Quantity = 250 Cycles
6.	Mating/Unmating Force (4) - Non Standard
7.	Contact Gaps

Group 5
PRFIA-SMPM-J-J-SP-2
SMPM-PF-P-HG-ST-TH-1
3 Assemblies
COMPRESSION FORCE TEST

Step	Description
1.	COMPRESSION FORCE TEST *Note: COMPRESS CONNECTOR AXIALLY. RECORD FORCE REQUIRED TO OVERCOME PRELOAD. ENSURES PART MATES BEFORE COMPRESSION.*

---

(1) Humidity = EIA-364-31
Test Condition = B (240 Hours)
Test Method = III (+25°C to +65°C @ 90% RH to 98% RH)
Test Exceptions: ambient pre-condition and delete steps 7a and 7b

(2) LLCR = EIA-364-23
Open Circuit Voltage = 20 mV Max
Test Current = 100 mA Max

(3) Mating/Unmating Force = Other
DSCC 10019, PER MIL-STD-348A, FULL DETENT
ENGAGE MAX = 8lbs ; DISENGAGE MIN = 3lbs

(4) Mating/Unmating Force = Other
DSCC 10019, PER MIL-STD-348A, SMOOTH BORE
ENGAGE MAX = 4lbs ; DISENGAGE MIN = 0.5lbs

(5) Thermal Shock = Other
PER DSCC-10019 AND MIL-STD-202-107
TEST CONDITION B PER DSCC 10019. EXCEPTION: HIGH TEMP. TO BE +165°C

FLOWCHARTS Continued

IR/DWV

Note: 5000 megaohms min IR

Pin-to-Ground

Group 1
PRFIA-SMPM-J-J-SP-2
SMPM-PF-P-HG-ST-TH-1
2 Assemblies

Note: 2 Thru Hole connectors and 1 Bullet required to test a full transmission path.

Step	Description
1.	Mated Height *Note: MEASURE MATED HEIGHT OF ALL 3 PARTS FULLY MATED. MEASURE FROM THE PCB SEATING SURFACE OF ONE MATING PART TC THE OTHER.*
2.	DWV Breakdown (2) - Non Standard

Group 2
PRFIA-SMPM-J-J-SP-2

2 Assemblies

Step	Description
1.	DWV Breakdown (2) - Non Standard

Group 3
PRFIA-SMPM-J-J-SP-2
SMPM-PF-P-HG-ST-TH-1
2 Assemblies

Note: 2 Thru Hole connectors and 1 Bullet required to test a full transmission path.

Step	Description
1.	Mated Height *Note: MEASURE MATED HEIGHT OF ALL 3 PARTS FULLY MATED. MEASURE FROM THE PCB SEATING SURFACE OF ONE MATING PART TC THE OTHER.*
2.	IR (4)
3.	DWV at Test Voltage (1) - Non Standard Test Voltage = 325 V
4.	Thermal Shock (5) - Non Standard
5.	IR (4)
6.	DWV at Test Voltage (1) - Non Standard Test Voltage = 325 V
7.	Humidity (3)
8.	Visual Inspection *Note: VISUAL INSPECTION FOR HUMIDITY DAMAGE*
9.	IR (4)
10.	DWV at Test Voltage (1) - Non Standard Test Voltage = 325 V

(1) DWV at Test Voltage = Other
DSCC-10019 AND MIL-PRF-39012 (PARA 4.6.14)
Test Condition = 1 (Sea Level) ; DWV test voltage is equal to 75% of the lowest breakdown voltage ; Test voltage applied for 60 seconds.

(2) DWV Breakdown = Other
MIL-PRF-39012 (PARA 4.6.14)
RECORD BREAKDOWN VOLTAGE. (DATA ONLY)

(3) Humidity = EIA-364-31
Test Condition = B (240 Hours)
Test Method = III (+25°C to +65°C @ 90% RH to 98% RH)
Test Exceptions: ambient pre-condition and delete steps 7a and 7b

(4) IR = EIA-364-21
Test Condition = 500 Vdc, 2 Minutes Max

(5) Thermal Shock = Other
PER DSCC-10019 AND MIL-STD-202-107
TEST CONDITION B PER DSCC 10019. EXCEPTION: HIGH TEMP. TO BE +165°C

FLOWCHARTS Continued

Retention

Group 1
PRFIA-SMPM-J-J-SP-2

10 Assemblies
BULLET

Step	Description
1.	Center Contact Retention MIN AXIAL RETENTION = 1.5 lbs *Note: PER DSCC 10019*

Group 2
PRFIA-SMPM-J-J-SP-2

10 Assemblies
BULLET

Step	Description
1.	Center Contact Retention *Note: PUSH TO DESTRUCT. RECORD FORCE.*

ATTRIBUTE DEFINITIONS

The following is a brief, simplified description of attributes.

THERMAL SHOCK:

1) DSCC 10091 and MIL-STD-202-107
2) Test Condition: B (-65℃ to +165°C)
3) Test Time: ½ hour dwell at each temperature extreme
4) Test Duration: Test condition B except 10 cycles instead of 5.
5) All test samples are pre-conditioned at ambient.
6) 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.

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.

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 +1000 mOhms: ----------Unstable
    f. >+1000 mOhms:----------Open Failure

ATTRIBUTE DEFINITIONS Continued

The following is a brief, simplified description of attributes

INSULATION RESISTANCE (IR):

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

1) PROCEDURE:
    a. Reference document: EIA-364-21, *Insulation Resistance Test Procedure for Electrical Connectors*.
    b. Test Conditions:
        i. Between Adjacent Contacts or Signal-to-Ground
        ii. Electrification Time 2.0 minutes
        iii. Test Voltage (500 VDC) corresponds to calibration settings for measuring resistances.
2) MEASUREMENTS:
3) When the specified test voltage is applied (VDC), the insulation resistance shall not be less than 1000 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).

ATTRIBUTE DEFINITIONS Continued

The following is a brief, simplified description of attributes

Retention Force:

1) Center contact retention.
    a. Keep 1.5 lbs for center pin.
    b. Push force for center pin until destroy.

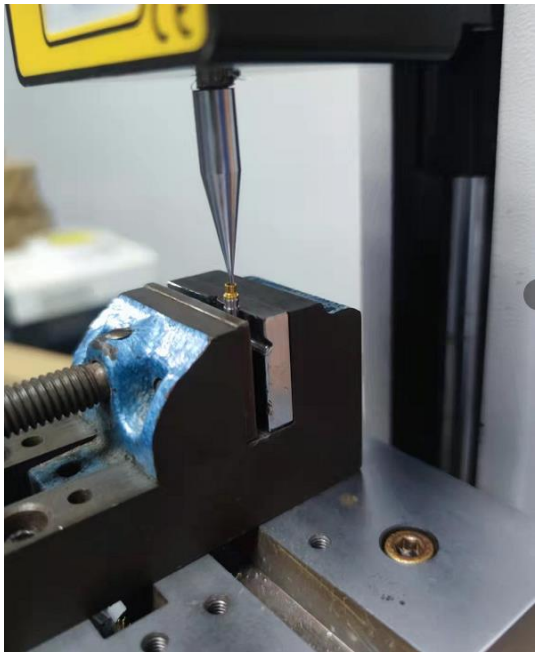


Fig. 1

RESULTS

Mating/Unmating Durability Force

Group 1 mating unmating force

- **Initial**
  - **Mating**
    - **Min ---------- 2.73 lbs**
    - **Max---------- 3.66 lbs**
  - **Unmating**
    - **Min ---------- 5.89 lbs**
    - **Max---------- 8.25 lbs**
- **After 50 Cycles**
  - **Mating**
    - **Min ---------- 2.58 lbs**
    - **Max---------- 3.33 lbs**
  - **Unmating**
    - **Min ---------- 4.16 lbs**
    - **Max---------- 6.92 lbs**
- **After 100 Cycles**
  - **Mating**
    - **Min ---------- 2.52 lbs**
    - **Max---------- 3.57 lbs**
  - **Unmating**
    - **Min ---------- 4.24 lbs**
    - **Max---------- 5.69 lbs**

Group 3 Connector Pull

- **Min ----------25.00 lbs**
- **Max----------26.74 lbs**

Group 4 mating unmating force

- **Initial**
  - **Mating**
    - **Min ---------- 1.63 lbs**
    - **Max---------- 2.09 lbs**
  - **Unmating**
    - **Min ---------- 1.31 lbs**
    - **Max---------- 1.63 lbs**
- **After 250 Cycles**
  - **Mating**
    - **Min ---------- 2.58 lbs**
    - **Max---------- 2.99 lbs**
  - **Unmating**
    - **Min ---------- 2.40 lbs**
    - **Max---------- 2.60 lbs**
- **After 500 Cycles**
  - **Mating**
    - **Min ---------- 3.05 lbs**
    - **Max---------- 3.55 lbs**
  - **Unmating**
    - **Min ---------- 2.43 lbs**
    - **Max---------- 2.80 lbs**

RESULTS Continued

Group 5 Compression Force

- **Min ---------- 2.52 lbs**
- **Max---------- 2.58 lbs**

Retention force

- **Group1**
  - **Keep 1.5lbs ---------- Passed**
- **Group2**
  - **Min---------- 5.38 lbs**
  - **Max ---------- 6.02 lbs**

Insulation Resistance minimums, IR

Pin to Ground

- **Initial**
  - **Mated----------45000 Meg Ω ---------- Passed**
- **Thermal Shock**
  - **Mated----------45000 Meg Ω ---------- Passed**
- **Humidity**
  - **Mated----------45000 Meg Ω ---------- Passed**

Dielectric Withstanding Voltage minimums, DWV

- **Test Voltage ----------680 VAC**

Pin to Ground

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

RESULTS Continued

LLCR Durability

Group 1(5 signal and 5 ground LLCR test points)

Signal Pin

- **Initial ---------- 60.65 mOhms Max**

Ground Pin

- **Initial ---------- 16.01 mOhms Max**
- **After 100 cycles**
  - **<= +5.0 mOhms ---------- 10 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 +1000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+1000 mOhms ---------- 0 Points ---------- Open Failure**
- **Thermal Shock**
  - **<= +5.0 mOhms ---------- 10 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 +1000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+1000 mOhms ---------- 0 Points ---------- Open Failure**

Group 2(3 signal and 3 ground LLCR test points)

Signal Pin

- **Initial ---------- 50.07 mOhms Max**

Ground Pin

- **Initial ---------- 17.71 mOhms Max**
- **After 25 cycles**
  - **<= +5.0 mOhms ---------- 6 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 +1000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+1000 mOhms ---------- 0 Points ---------- Open Failure**
- **humidity**
  - **<= +5.0 mOhms ---------- 5 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 1 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +1000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+1000 mOhms ---------- 0 Points ---------- Open Failure**

DATA SUMMARIES

Durability Force

Group 1

	Initial				After 50 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	12.14	2.73	26.20	5.89	11.48	2.58	18.50	4.16
Maximum	16.28	3.66	36.70	8.25	14.81	3.33	30.78	6.92
Average	13.74	**3.09**	28.83	**6.48**	12.81	**2.88**	22.39	**5.03**
St Dev	1.54	0.35	4.51	1.01	1.37	0.31	4.82	1.08
Count	5	5	5	5	5	5	5	5

	After 100 Cycles			
	Mating		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	11.21	2.52	18.86	4.24
Maximum	15.88	3.57	25.31	5.69
Average	13.76	**3.09**	21.08	**4.74**
St Dev	1.91	0.43	2.47	0.56
Count	5	5	5	5

Group 4

	Initial				250 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	7.24	1.63	5.84	1.31	11.49	2.58	10.68	2.40
Maximum	9.28	2.09	7.25	1.63	13.28	2.99	11.56	2.60
Average	7.96	**1.79**	6.49	**1.46**	12.30	**2.77**	11.12	**2.50**
St Dev	0.86	0.19	0.67	0.15	0.64	0.14	0.40	0.09
Count	5	5	5	5	5	5	5	5

	500 Cycles			
	Mating		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	13.56	3.05	10.82	2.43
Maximum	15.80	3.55	12.45	2.80
Average	14.71	**3.31**	11.52	**2.59**
St Dev	1.08	0.24	0.70	0.16
Count	5	5	5	5

DATA SUMMARIES Continued

Group 3

	Force (lbs)
Minimum	25.00
Maximum	26.74
Average	25.68

Group 5

	Force (lbs)
Minimum	2.52
Maximum	2.58
Average	2.55

Retention Force:

Keep 1.5 lbs

	Force (lbs)
Minimum	1.50
Maximum	1.50
Average	1.50

Destroy

	Force (lbs)
Minimum	5.38
Maximum	6.02
Average	5.66

DATA SUMMARIES Continued

INSULATION RESISTANCE (IR):

	Pin to Ground		
	Mated	Unmated	Unmated
Minimum	**PRFIA/SMPM**	**PRFIA**	**SMPM**
Initial	45000	45000	45000
Thermal	45000	45000	45000
Humidity	45000	45000	45000

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

Voltage Rating Summary	
Minimum	**PRFIA/SMPM**
Break Down Voltage	905
Test Voltage	680
Working Voltage	225

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

DATA SUMMARIES Continued

LLCR Durability:

1) A total of 5 signal and 5 ground 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 +1000 mOhms----------Unstable
   f. >+1000 mOhms:----------Open Failure

Group 1

LLCR Measurement Summaries by Pin Type				
Date	7/6/2022	7/8/2022	7/19/2022	
Room Temp (Deg C)	23	23	23	
Rel Humidity (%)	54	54	54	
Technician	Peter Chen	Peter Chen	Peter Chen	
mOhm values	**Actual Initial**	**Delta 100 Cycles**	**Delta Therm Shck**	**Delta**
	Pin Type 1: Ground			
Average	16.87	1.12	3.31	
St. Dev.	0.72	0.49	0.62	
Min	16.01	0.61	2.65	
Max	18.15	2.01	4.45	
Summary Count	5	5	5	
Total Count	5	5	5	
	Pin Type 2: Signal			
Average	52.30	0.99	1.32	
St. Dev.	4.19	1.68	1.77	
Min	49.88	0.05	0.04	
Max	60.65	4.35	4.77	
Summary Count	5	5	5	
Total Count	5	5	5	

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

DATA SUMMARIES Continued

Group 2

	LLCR Measurement Summaries by Pin Type			
Date	7/6/2022	7/8/2022		8/1/2022
Room Temp (Deg C)	23	23		23
Rel Humidity (%)	54	54		54
Technician	Peter Chen	Peter Chen		Peter Chen
mOhm values	**Actual Initial**	**Delta 25 Cycles**	**Delta**	**Delta Humidity**
	Pin Type 1: Ground			
Average	17.03	1.53		1.53
St. Dev.	0.49	0.09		0.80
Min	16.61	1.46		0.45
Max	17.71	1.65		2.35
Summary Count	3	3		3
Total Count	3	3		3
	Pin Type 2: Signal			
Average	49.98	0.09		3.24
St. Dev.	0.10	0.09		2.54
Min	49.84	0.01		0.59
Max	50.07	0.22		6.66
Summary Count	3	3		3
Total Count	3	3		3

LLCR Delta Count by Category						
	Stable	**Minor**	**Acceptable**	**Marginal**	**Unstable**	**Open**
mOhms	**<=5**	**>5 & <=10**	**>10 & <=15**	**>15 & <=50**	**>50 & <=1000**	**>1000**
25 Cycles	**6**	**0**	**0**	**0**	**0**	**0**
Humidity	**5**	**1**	**0**	**0**	**0**	**0**

EQUIPMENT AND CALIBRATION SCHEDULES

Equipment #: HZ-TCT-01
Description: Normal force analyzer
Manufacturer: Mecmesin Multitester
Model: Mecmesin Multitester 2.5-i
Serial #: 08-1049-04
Accuracy: Last Cal: 4/26/2022, Next Cal: 4/25/2023

Equipment #: HZ-THC-01
Description: Humidity transmitter
Manufacturer: Thermtron
Model: SM-8-8200
Serial #: 38846
Accuracy: Last Cal: 2/28/2022, Next Cal: 2/27/2023

Equipment #: HZ-TSC-01
Description: Vertical Thermal Shock Chamber
Manufacturer: Cincinnatti Sub Zero
Model: VTS-3-6-6-SC/AC
Serial #: 10-VT14994
Accuracy: See Manual
… Last Cal: 06/28/2022, Next Cal: 06/27/2023

Equipment #: HZ-HPM-01
Description: NA9636H
Manufacturer: Ainuo
Model: 6031A
Serial #: 089601091
Accuracy: Last Cal: 3/7/2022, Next Cal: 3/6/2023