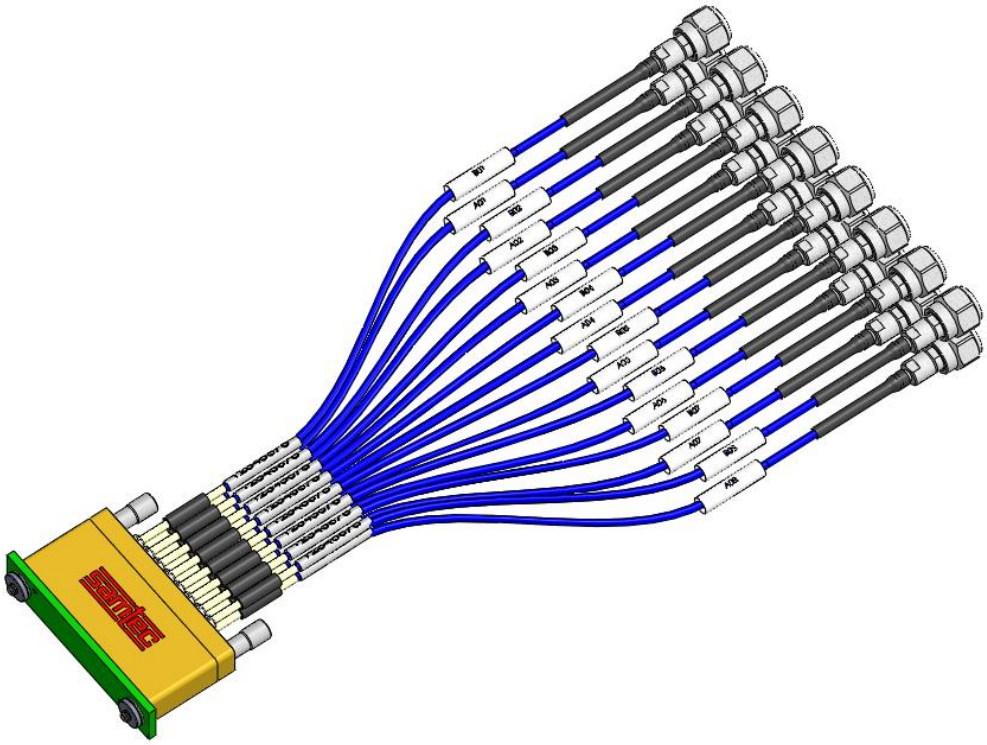
| | |
|---|---|
| Project Number: Design Qualification Test Report | Tracking Code: CR-896102_Report_Rev_1 |
| Requested by: Alvin Wang | Date: 2/29/2024 |
| Part #: BE90C-S-XXXX-N-01-0152 | |
| Part description: BE90C | Tech: Keney Chen |
| Test Start: 03/28/2023 | Test Completed: 04/25/2023 |



# DESIGN QUALIFICATION TEST REPORT

## BE90C
## BE90C-S-XXXX-N-01-0152

## REVISION HISTORY

| DATA | REV.NUM. | DESCRIPTION | ENG |
|---|---|---|---|
| **9/20/2023** | **1** | **Initial Issue** | **KC** |

## CERTIFICATION

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



### SCOPE

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

### APPLICABLE DOCUMENTS

Standards: EIA Publication 364

### TEST SAMPLES AND PREPARATION

1) All materials were manufactured in accordance with the applicable product specification.
2) All test samples were identified and encoded to maintain traceability throughout the test sequences.
3) Either an automated cleaning procedure or an ultrasonic cleaning procedure may be used.
4) The automated procedure is used with aqueous compatible soldering materials.
5) Parts not intended for testing LLCR and DWV/IR are visually inspected and cleaned if necessary.
6) Any additional preparation will be noted in the individual test sequences.
7) Solder Information: Lead free
8) Samtec Test PCBs used: PCB-10920-TST.

## FLOWCHARTS

# Thermal Aging

Group 1

BE90B-J-S-2-08

BE90C-S-XXXX-N-01-0152

2 Assemblies

*Note: Four cables each housing.*

| Step | Description |
| --- | --- |
| 1. | Contact Gaps<br>*Note: Inspect distance: tip of pogo pin to shell.* |
| 2. | LLCR (1)<br>*Note: Signal and ground.* |
| 3. | Thermal Age (3) |
| 4. | LLCR (1)<br>Max Delta = 15 mOhm<br>*Note: Signal and ground.* |
| 5. | Contact Gaps<br>*Note: Inspect distance: tip of pogo pin to shell.* |

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

(2) Mating/Unmating Force = EIA-364-13

(3) Thermal Age = EIA-364-17
Test Condition = 4 (105°C)
Time Condition = B (250 Hours)

**FLOWCHARTS Continued**

## Mating/Unmating/Durability

*Note:*
*a. No cleaning of board or probe between cycles.*
*b. No changing of board between cycles.*

Group 1
BE90B-J-S-2-08
BE90C-S-XXXX-N-01-0152
2 Assemblies

*Note: Four cables each housing.*

| Step | Description |
| --- | --- |
| 1. | Contact Gaps<br>*Note: Inspect distance: tip of pogo pin to shell.* |
| 2. | LLCR (2)<br>*Note: Note: Signal and ground.* |
| 3. | Cycles<br>Quantity = 100 Cycles<br>*Note: 100 Cycles.* |
| 4. | Contact Gaps<br>*Note: Review distance: tip of pogo pin to shell.* |
| 5. | Cycles<br>Quantity = 100 Cycles<br>*Note: 200 Cycles.* |
| 6. | Contact Gaps<br>*Note: Review distance: tip of pogo pin to shell.* |
| 7. | Cycles<br>Quantity = 100 Cycles<br>*Note: 300 Cycles.* |
| 8. | Contact Gaps<br>*Note: Review distance: tip of pogo pin to shell.* |
| 9. | Cycles<br>Quantity = 100 Cycles<br>*Note: 400 Cycles.* |
| 10. | Contact Gaps |

Group 2
BE90B-J-S-2-08
BE90C-S-XXXX-N-01-0152
2 Assemblies

*Note: Four cables each housing.*

| Step | Description |
| --- | --- |
| 1. | Contact Gaps<br>*Note: Inspect distance: tip of pogo pin to shell.* |
| 2. | LLCR (2)<br>*Note: Signal and ground.* |
| 3. | Cycles<br>Quantity = 100 Cycles<br>*Note: 100 Cycles.* |
| 4. | Contact Gaps<br>*Note: Review distance: tip of pogo pin to shell.* |
| 5. | Cycles<br>Quantity = 100 Cycles<br>*Note: 200 Cycles.* |
| 6. | Contact Gaps<br>*Note: Review distance: tip of pogo pin to shell.* |
| 7. | Cycles<br>Quantity = 100 Cycles<br>*Note: 300 Cycles.* |
| 8. | Contact Gaps<br>*Note: Review distance: tip of pogo pin to shell.* |
| 9. | Cycles<br>Quantity = 100 Cycles<br>*Note: 400 Cycles.* |
| 10. | Contact Gaps |

## FLOWCHARTS Continued

*Note: Review distance: tip of pogo pin to shell.*

11. Cycles
    Quantity = 100 Cycles
    *Note: 500 Cycles.*
12. Contact Gaps
    *Note: Review distance: tip of pogo pin to shell.*
13. Cycles
    Quantity = 100 Cycles
    *Note: 600 Cycles.*
14. Contact Gaps
    *Note: Review distance: tip of pogo pin to shell.*
15. Cycles
    Quantity = 100 Cycles
    *Note: 700 Cycles.*
16. Contact Gaps
    *Note: Review distance: tip of pogo pin to shell.*
17. Cycles
    Quantity = 100 Cycles
    *Note: 800 Cycles.*
18. Contact Gaps
    *Note: Review distance: tip of pogo pin to shell.*
19. Cycles
    Quantity = 100 Cycles
    *Note: 900 Cycles.*
20. Contact Gaps
    *Note: Review distance: tip of pogo pin to shell.*
21. Cycles
    Quantity = 100 Cycles
    *Note: 1000 Cycles.*
22. Contact Gaps
    *Note: Inspect distance: tip of pogo pin to shell.*
23. LLCR (2)
    Max Delta = 15 mOhm
    *Note: Signal and ground.*
24. Thermal Shock (3)
25. Contact Gaps

*Note: Review distance: tip of pogo pin to shell.*

11. Cycles
    Quantity = 100 Cycles
    *Note: 500 Cycles.*
12. Contact Gaps
    *Note: Review distance: tip of pogo pin to shell.*
13. Cycles
    Quantity = 100 Cycles
    *Note: 600 Cycles.*
14. Contact Gaps
    *Note: Review distance: tip of pogo pin to shell.*
15. Cycles
    Quantity = 100 Cycles
    *Note: 700 Cycles.*
16. Contact Gaps
    *Note: Review distance: tip of pogo pin to shell.*
17. Cycles
    Quantity = 100 Cycles
    *Note: 800 Cycles.*
18. Contact Gaps
    *Note: Review distance: tip of pogo pin to shell.*
19. Cycles
    Quantity = 100 Cycles
    *Note: 900 Cycles.*
20. Contact Gaps
    *Note: Review distance: tip of pogo pin to shell.*
21. Cycles
    Quantity = 100 Cycles
    *Note: 1000 Cycles.*
22. Contact Gaps
    *Note: Inspect distance: tip of pogo pin to shell.*
23. LLCR (2)
    Max Delta = 15 mOhm
    *Note: Signal and ground.*
24. Cycles
    Quantity = 4000 Cycles
    *Note: 5000 cycles*
25. LLCR (2)

## FLOWCHARTS Continued

*Note: Inspect distance: tip of pogo pin to shell.*

Max Delta = 15 mOhm
*Note: Signal and ground.*

26. LLCR (2)
    Max Delta = 15 mOhm
    *Note: Signal and ground.*
27. Humidity (1)
28. Contact Gaps
    *Note: Inspect distance: tip of pogo pin to shell.*
29. LLCR (2)
    Max Delta = 15 mOhm
    *Note: Signal and ground.*

---

(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) Thermal Shock = EIA-364-32
Exposure Time at Temperature Extremes = 1/2 Hour
Method A, Test Condition = I (-55°C to +85°C)
Test Duration = A-3 (100 Cycles)

## FLOWCHARTS Continued

# IR/DWV

***Signal-to-Ground***

Group 1

BE90C-S-XXXX-N-01-0152
8 Assemblies

| Step | Description |
|---|---|
| 1. | DWV Breakdown(2) |

Group 2

BE90C-S-XXXX-N-01-0152
2 Assemblies

*Note: Four cable each housing*

| Step | Description |
|---|---|
| 1. | IR(4) |
| 2. | DWV at Test Voltage(1) |
| 3. | Thermal Shock(5) |
| 4. | IR(4) |
| 5. | DWV at Test Voltage(1) |
| 6. | Humidity(3) |
| 7. | IR(4) |
| 8. | DWV at Test Voltage(1) |

(1) DWV at Test Voltage = EIA-364-20
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 = EIA-364-20
Test Condition = 1 (Sea Level)
DWV test voltage is equal to 75% of the lowest breakdown voltage
Test voltage applied for 60 seconds

(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 = EIA-364-32
Exposure Time at Temperature Extremes =1/2 Hour
Method A, Test Condition = I (-55°C to +85°C)
Test Duration = A-3 (100 Cycles)

## ATTRIBUTE DEFINITIONS

The following is a brief, simplified description of attributes.

### THERMAL SHOCK:

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

### 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.

### 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 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 dielectric withstanding voltage shall be recorded.

The working voltage shall be recorded as one-third (1/3) of the dielectric withstanding voltage (one-fourth of the breakdown voltage).

## RESULTS

**LLCR Mating/Unmating Durability Group 1 (16 LLCR test points)**

**Signal pin**

- **Initial---------- 88.21 mOhms Max**

**Ground Pin**

- **Initial---------- 33.01 mOhms Max**
- **Thermal**
- **Durability, 1000 Cycles**
  - **<= +5.0 mOhms---------- 16 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---------- 16 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---------- 16 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**

**RESULTS Continued**

**LLCR Mating/Unmating Durability Group 2 (16 LLCR test points)**

**Signal pin**

- **Initial---------- 88.58 mOhms Max**

**Ground Pin**

- **Initial---------- 33.25 mOhms Max**
- **Thermal**
- **Durability, 1000 Cycles**
  - **<= +5.0 mOhms---------- 16 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**
- **Durability, 5000 Cycles**
  - **<= +5.0 mOhms---------- 16 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**

**LLCR Thermal Aging Group (16 LLCR test points)**

**Signal pin**

- **Initial---------- 88.57 mOhms Max**

**Ground Pin**

- **Initial---------- 33.21 mOhms Max**
- **Thermal**
  - **<= +5.0 mOhms---------- 16 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**

## RESULTS Continued

**Insulation Resistance minimums, IR**

**Pin to Ground**

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

**Dielectric Withstanding Voltage minimums, DWV**

- **Minimums**
  - **Breakdown Voltage---------- 827 VAC**
  - **Test Voltage ---------- 620 VAC**
  - **Working Voltage ---------- 207 VAC**

**Pin to Ground**

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

# DATA SUMMARIES

## LLCR Mating/Unmating Durability Group 1

1) A total of 16 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

| ***LLCR Measurement Summaries by Pin Type*** | | | | |
|---|---|---|---|---|
| Date | 3/29/2023 | 3/29/2023 | 4/12/2023 | 4/24/2023 |
| Room Temp (Deg C) | 23 | 23 | 23 | 23 |
| Rel Humidity (%) | 51 | 51 | 51 | 51 |
| Technician | Keney Chen | Keney Chen | Keney Chen | Keney Chen |
| **mOhm values** | **Actual Initial** | **Delta 1000 Cycles** | **Delta Them shock** | **Delta Humidity** |
| | **Pin Type 1: Ground** | | | |
| Average | 87.37 | 0.54 | 0.36 | 1.53 |
| St. Dev. | 0.50 | 0.21 | 0.29 | 1.26 |
| Min | 86.52 | 0.21 | 0.02 | 0.04 |
| Max | 88.21 | 0.90 | 0.90 | 3.75 |
| Summary Count | 8 | 8 | 8 | 8 |
| Total Count | 8 | 8 | 8 | 8 |
| | **Pin Type 2: Signal** | | | |
| Average | 32.29 | 0.48 | 2.89 | 2.51 |
| St. Dev. | 0.42 | 0.25 | 0.56 | 0.89 |
| Min | 31.64 | 0.25 | 2.10 | 1.11 |
| Max | 33.01 | 1.06 | 3.83 | 3.72 |
| Summary Count | 8 | 8 | 8 | 8 |
| Total Count | 8 | 8 | 8 | 8 |

| ***LLCR Delta Count by Category*** | | | | | | |
|---|---|---|---|---|---|---|
| | **Stable** | **Minor** | **Acceptable** | **Marginal** | **Unstable** | **Open** |
| **mOhms** | **<=5** | **>5 & <=10** | **>10 & <=15** | **>15 & <=50** | **>50 & <=1000** | **>1000** |
| **1000 Cycles** | **16** | **0** | **0** | **0** | **0** | **0** |
| **Them shock** | **16** | **0** | **0** | **0** | **0** | **0** |
| **Humidity** | **16** | **0** | **0** | **0** | **0** | **0** |

# DATA SUMMARIES Continued

## LLCR Mating/Unmating Durability Group 2

1) A total of 16 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

| ***LLCR Measurement Summaries by Pin Type*** | | | | |
|---|---|---|---|---|
| Date | 3/29/2023 | 3/29/2023 | 4/14/2023 | |
| Room Temp (Deg C) | 23 | 23 | 23 | |
| Rel Humidity (%) | 51 | 51 | 51 | |
| Technician | Keney Chen | Keney Chen | Keney Chen | |
| **mOhm values** | **Actual Initial** | **Delta 1000 Cycles** | **Delta 5000 Cycles** | |
| | **Pin Type 1: Signal** | | | |
| Average | 87.89 | 0.74 | 0.57 | |
| St. Dev. | 0.48 | 0.54 | 0.44 | |
| Min | 87.23 | 0.01 | 0.02 | |
| Max | 88.58 | 1.63 | 0.99 | |
| Summary Count | 8 | 8 | 8 | |
| Total Count | 8 | 8 | 8 | |
| | **Pin Type 2: Ground** | | | |
| Average | 32.69 | 0.42 | 0.61 | |
| St. Dev. | 0.47 | 0.38 | 0.60 | |
| Min | 32.04 | 0.08 | 0.10 | |
| Max | 33.25 | 1.10 | 1.94 | |
| Summary Count | 8 | 8 | 8 | |
| Total Count | 8 | 8 | 8 | |

| ***LLCR Delta Count by Category*** | | | | | | |
|---|---|---|---|---|---|---|
| | **Stable** | **Minor** | **Acceptable** | **Marginal** | **Unstable** | **Open** |
| **mOhms** | **<=5** | **>5 & <=10** | **>10 & <=15** | **>15 & <=50** | **>50 & <=1000** | **>1000** |
| **1000 Cycles** | **16** | **0** | **0** | **0** | **0** | **0** |
| **5000 Cycles** | **16** | **0** | **0** | **0** | **0** | **0** |

# DATA SUMMARIES Continued

## LLCR Thermal Aging Group

1) A total of 16 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

| ***LLCR Measurement Summaries by Pin Type*** | | | | |
|---|---|---|---|---|
| Date | 4/14/2023 | 4/25/2023 | | |
| Room Temp (Deg C) | 23 | 23 | | |
| Rel Humidity (%) | 51 | 51 | | |
| Technician | Keney Chen | Keney Chen | | |
| **mOhm values** | **Actual Initial** | **Delta Thermal** | **Delta** | **Delta** |
| | **Pin Type 1: Ground** | | | |
| Average | 87.67 | 0.65 | | |
| St. Dev. | 0.77 | 0.53 | | |
| Min | 86.50 | 0.09 | | |
| Max | 88.57 | 1.47 | | |
| Summary Count | 8 | 8 | | |
| Total Count | 8 | 8 | | |
| | **Pin Type 2: Signal** | | | |
| Average | 31.56 | 3.25 | | |
| St. Dev. | 1.09 | 1.14 | | |
| Min | 29.57 | 1.43 | | |
| Max | 33.21 | 4.89 | | |
| Summary Count | 8 | 8 | | |
| Total Count | 8 | 8 | | |

| ***LLCR Delta Count by Category*** | | | | | | |
|---|---|---|---|---|---|---|
| | **Stable** | **Minor** | **Acceptable** | **Marginal** | **Unstable** | **Open** |
| **mOhms** | **<=5** | **>5 & <=10** | **>10 & <=15** | **>15 & <=50** | **>50 & <=1000** | **>1000** |
| **Thermal** | **16** | **0** | **0** | **0** | **0** | **0** |

## DATA SUMMARIES Continued

**INSULATION RESISTANCE (IR):**

| | Pin to Ground |
|---|---|
| Minimum | **BE90C** |
| **Initial** | 45000 |
| **Thermal** | 45000 |
| **Humidity** | 45000 |

**DIELECTRIC WITHSTANDING VOLTAGE (DWV):**

| Voltage Rating Summary | |
|---|---|
| **Minimum** | **BE90C/BE90C** |
| **Break Down Voltage** | 827 |
| **Test Voltage** | 620 |
| **Working Voltage** | 207 |

| Pin to Ground | |
|---|---|
| **Initial Test Voltage** | Passed |
| **After Thermal Test Voltage** | Passed |
| **After Humidity Test Voltage** | Passed |

**Mating and Un-mating Group**

Review distance: tip of pogo pin to shell

| | Mating and Un-mating (Manual) | | | |
|---|---|---|---|---|
| | **Group1-1#** | **Group1-2#** | **Group2-3#** | **Group2-4#** |
| **100cycles** | Passed | Passed | Passed | Passed |
| **200cycles** | Passed | Passed | Passed | Passed |
| **300cycles** | Passed | Passed | Passed | Passed |
| **400cycles** | Passed | Passed | Passed | Passed |
| **500cycles** | Passed | Passed | Passed | Passed |
| **600cycles** | Passed | Passed | Passed | Passed |
| **700cycles** | Passed | Passed | Passed | Passed |
| **800cycles** | Passed | Passed | Passed | Passed |
| **900cycles** | Passed | Passed | Passed | Passed |
| **1000cycles** | Passed | Passed | Passed | Passed |
| **5000cycles** | | | Passed | Passed |

## 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: 4/26/2023, Next Cal: 4/25/2024

**Equipment #:** HZ-OV-01
**Description:** Oven
**Manufacturer:** Huida
**Model:** CS101-1E
**Serial #:** CS101-1E-B
**Accuracy:** Last Cal: 12/13/2022, Next Cal: 12/12/2023

**Equipment #:** HZ-THC-01
**Description:** Humidity transmitter
**Manufacturer:** Thermtron
**Model:** SM-8-8200
**Serial #:** 38846
**Accuracy:** Last Cal: 2/27/2023, Next Cal: 2/26/2024

**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: 06/28/2023, Next Cal: 06/27/2024

**Equipment #:** HZ-HPM-01
**Description:** NA9636H
**Manufacturer:** Ainuo
**Model:** 6031A
**Serial #:** 089601091
**Accuracy:** Last Cal: 3/7/2023, Next Cal: 3/6/2024

**Equipment #:** HZ-MO-05
**Description:** Micro-ohmmeter
**Manufacturer:** Keithley
**Model:** 3706
**Serial #:** 1285188
**Accuracy:** Last Cal: 11/15/2022, Next Cal: 11/14/2023

## EQUIPMENT AND CALIBRATION SCHEDULES Continued

**Equipment #:** HZ-MO-01
**Description:** Micro-ohmmeter
**Manufacturer:** Keithley
**Model:** 2700
**Serial #:** 1199807
**Accuracy: Last** Cal: 04/26/2023, Next Cal: 04/25/2024

**Equipment #:** HZ-PS-01
**Description:** Power Supply
**Manufacturer:** Agilent
**Model:** 6031A
**Serial #:** MY41000982
**Accuracy:** Last Cal: 04/26/2023, Next Cal: 04/25/2024

**Equipment #:** ACLM-01
**Description:** Accelerometer
**Manufacturer:** PCB Piezotronics
**Model:** 352C03
**Serial #:** 115819
**Accuracy:** See Manual
… Last Cal: 07/18/2023, Next Cal: 07/18/2024

**Equipment #:** ED-03
**Description:** Event Detector
**Manufacturer:** Analysis Tech
**Model:** 32EHD
**Serial #:** 1100604
**Accuracy:** See Manual
… Last Cal: 10/31/2022, Next Cal: 10/31/2023

**Equipment #:** MO-04
**Description:** Multimeter /Data Acquisition System
**Manufacturer:** Keithley
**Model:** 2700
**Serial #:** 0798688
**Accuracy:** See Manual
… Last Cal: 09/11/2023, Next Cal: 09/11/2024