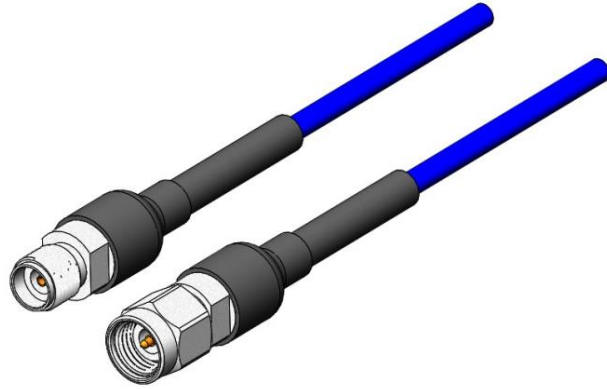




Project Number: Design Qualification Test Report	Tracking Code: 2195757_Report_Rev_1
Requested by: Alvin Wang	Date: 3/19/2020
Part #: RF085-92SP-92SP-0152/RF085-92SJ-92SJ-0152	
Part description: RF085-92SP/RF085-92SJ	Tech: Tony Wagoner
Test Start: 12/12/2019	Test Completed: 1/18/2020



DESIGN QUALIFICATION TEST REPORT
RF085-92SP/RF085-92SJ
RF085-92SP-92SP-0152/RF085-92SJ-92SJ-0152

Tracking Code: 2195757_Report_Rev_1	Part #: RF085-92SP-92SP-0152/RF085-92SJ-92SJ-0152
Part description: RF085-92SP/RF085-92SJ	

REVISION HISTORY

DATA	REV.NUM.	DESCRIPTION	ENG
2/24/2020	1	Initial Issue	KH

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: Design Qualification test. Please see test plan.

APPLICABLE DOCUMENTS

Standards: EIA Publication 364

TEST SAMPLES AND PREPARATION

- 1) All materials were manufactured in accordance with the applicable product specification.
- 2) All test samples were identified and encoded to maintain traceability throughout the test sequences.
- 3) After soldering, the parts to be used for LLCR 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 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-103219-TST

FLOWCHARTS

Mating/Unmating/Durability

Group 1

RF085-92SJ-505050-0152

RF085-92SP-505050-0152

4 Assemblies

Step	Description
1.	Length & Mass
2.	Interface Gaging
3.	DWV at Test Voltage (1) - Non Standard DWV = 500 VAC
4.	LLCR (2) - Non Standard <i>Note: Signal and ground.</i>
5.	Cycles Quantity = 500 Cycles <i>Note: By hand.</i> <i>Torque each time to 8 in-lbs.</i> <i>Note: Rotate plug coupling nut only. Do not rotate entire assembly.</i> <i>MIL-PRF-39012, Paragraph. 4.6.12</i>
6.	LLCR (2) - Non Standard Max Delta = 15 mOhm <i>Note: Signal and ground.</i>
7.	Interface Gaging

(1) DWV at Test Voltage = Other

Test Condition = 1 (Sea Level) Test voltage applied for 60 seconds
MIL-PRF-39012, Paragraph. 4.6.14 per MIL-STD-202-301

(2) LLCR = Other

Open Circuit Voltage = 20 mV Max
Test Current = 100 mA Max
MIL-PRF-39012, Paragraph 4.6.13 except current to be 100mA nominal and voltage to be 20 mV maximum.

FLOWCHARTS Continued**IR/DWV****Pin-to-Ground**Group 1

RF085-92SJ-505050-1000

RF085-92SP-505050-1000

4 Assemblies

Note: For STEP 6, please put the following additional cable assemblies in the thermal shock chamber (ride along parts).

Plug & jack versions are mated with dust caps (Yellow) on open ends.

Plug version: RF085-92SJ-92SJ-1000 (4 PCS)

Jack version: RF085-92SP-92SP-1000 (4 PCS)

Step	Description
1.	Length & Mass
2.	Interface Gaging
3.	IR (2) - Non Standard
4.	DWV at Test Voltage (1) - Non Standard Test Voltage = 500 VAC
5.	LLCR (3) - Non Standard <i>Note: Signal and ground.</i>
6.	Thermal Shock (4) - Non Standard
7.	IR (2) - Non Standard
8.	DWV at Test Voltage (1) - Non Standard Test Voltage = 500 VAC
9.	LLCR (3) - Non Standard Max Delta = 15 mOhm <i>Note: Signal and ground.</i>
10.	Interface Gaging

(1) DWV at Test Voltage = Other

Test Condition = 1 (Sea Level) Test voltage applied for 60 seconds
MIL-PRF-39012, Paragraph. 4.6.14 per MIL-STD-202-301

(2) IR = Other

Test Condition = 500V DC, 2 Minutes Max
MIL-PRF-39012, Paragraph 4.6.8 per MIL-STD-202-302

(3) LLCR = Other

Open Circuit Voltage = 20 mV Max
Test Current = 100 mA Max
MIL-PRF-39012, Paragraph 4.6.13 except current to be 100mA nominal and voltage to be 20 mV maximum.

(4) Thermal Shock = Other

Exposure Time at Temperature Extremes = 1/2 Hour
Test Condition = I (-65°C to +125°C)
Test Duration = test condition B except 10 cycles instead of 5.
MIL-PRF-39012, Paragraph. 4.6.17 per MIL-STD-202-107

FLOWCHARTS Continued**Cable Pull**Group 1

RF085-92SJ-505050-0152

2 Assemblies

0 Degrees

Step	Description
1.	Cable Retention (2) - Non Standard <i>Note: Pull-to-destruct.</i>

Group 2

RF085-92SP-505050-0152

2 Assemblies

0 Degrees

Step	Description
1.	Cable Retention (2) - Non Standard <i>Note: Pull-to-destruct.</i>

Group 3

RF085-92SJ-505050-0152

RF085-92SP-505050-0152

4 Assemblies

0 Degrees

Step	Description
1.	Length & Mass
2.	Interface Gaging
3.	LLCR (3) - Non Standard <i>Note: Signal and ground.</i>
4.	Cable Retention (1) - Non Standard <i>Note: Apply 10 pounds (4.6 kg) for Cable Retention test.</i>
5.	LLCR (3) - Non Standard <i>Note: Signal and ground.</i>
6.	Interface Gaging

(1) Cable Retention = Other

Apply 15 pounds (6.8kg) for Cable Retention test.

MIL-PRF-30192, Paragraph 4.6.21

(2) Cable Retention = Other

Pull-to-destruct.

MIL-PRF-30192, Paragraph 4.6.21

(3) LLCR = Other

Open Circuit Voltage = 20 mV Max

Test Current = 100 mA Max

MIL-PRF-39012, Paragraph 4.6.13 except current to be 100mA nominal and voltage to be 20 mV maximum.

ATTRIBUTE DEFINITIONS

The following is a brief, simplified description of attributes.

THERMAL SHOCK:

- 1) MIL-PRF-39012, *Paragraph. 4.6.17 per MIL-STD-202-107*
- 2) Test Condition: I (-65°C to +125°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.

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 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).

ATTRIBUTE DEFINITIONS Continued

The following is a brief, simplified description of attributes

CABLE PULL:

- 1) Secure cable near center and pull on connector
 - a. At 0°, in-line with cable



Fig. 1

0° Connector pull, notice the electrical continuity hook-up wires.

RESULTS**Cable Pull force**

- **0° Pull**
 - SJ**
 - **Min**-----45.93 lbs
 - **Max**-----46.84 lbs
 - SP**
 - **Min**-----49.46 lbs
 - **Max**-----50.17 lbs

Insulation Resistance minimums, IR**Pin to Ground**

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

Dielectric Withstanding Voltage minimums, DWV

- **Minimums**
 - **Test Voltage**-----500 VAC

Pin to Ground

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

RESULTS Continued**Length & Mass****Mating/Unmating Durability Group****Length****SJ**

- **Min**----- 153.19 mm
- **Max**----- 154.78 mm

SP

- **Min**----- 153.19 mm
- **Max**----- 153.99 mm

Mass**SJ**

- **Min**----- 7.372 g
- **Max**----- 7.407 g

SP

- **Min**----- 8.518 g
- **Max**----- 8.545 g

IR/DWV Group**Length****SJ**

- **Min**----- 998.54 mm
- **Max**----- 1006.48 mm

SP

- **Min**----- 1004.89 mm
- **Max**----- 1008.86 mm

Mass**SJ**

- **Min**----- 23.937 g
- **Max**----- 24.593 g

SP

- **Min**----- 25.123 g
- **Max**----- 25.192 g

Cable Pull Group**Length****SJ**

- **Min**----- 153.99 mm
- **Max**----- 153.99 mm

SP

- **Min**----- 153.99 mm
- **Max**----- 153.99 mm

Mass**SJ**

- **Min**----- 7.372 g
- **Max**----- 7.384 g

SP

- **Min**----- 8.550 g
- **Max**----- 8.515 g

RESULTS Continued**Interface Gaging****Mating/Unmating Durability Group****SJ****Initial**

- **Min**-----0.00043 inch
- **Max**-----0.00252 inch

After 500 cycles

- **Min**-----0.00024 inch
- **Max**-----0.00260 inch

SP**Initial**

- **Min**-----0.00063 inch
- **Max**-----0.00251 inch

After 500 cycles

- **Min**-----0.00012 inch
- **Max**-----0.00276 inch

IR/DWV Group**SJ****Initial**

- **Min**-----0.00012 inch
- **Max**-----0.00256 inch

After 500 cycles

- **Min**-----0.00102 inch
- **Max**-----0.00197 inch

SP**Initial**

- **Min**-----0.00177 inch
- **Max**-----0.00327 inch

After 500 cycles

- **Min**-----0.00154 inch
- **Max**-----0.00355 inch

Cable Pull Group**SJ****Initial**

- **Min**-----0.00020 inch
- **Max**-----0.00032 inch

After 500 cycles

- **Min**-----0.00087 inch
- **Max**-----0.00102 inch

SP**Initial**

- **Min**-----0.00193 inch
- **Max**-----0.00291 inch

After 500 cycles

- **Min**-----0.00284 inch
- **Max**-----0.00287 inch

RESULTS Continued**LLCR IR/DWV (4 signal and 4 ground LLCR test points)****Signal Pin**

- **Initial** -----388.86 mOhms Max
- **Thermal Shock**
 - <= +5.0 mOhms-----4 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

Ground Pin

- **Initial** -----45.58 mOhms Max
- **Thermal Shock**
 - <= +5.0 mOhms-----1 Points-----Stable
 - +5.1 to +10.0 mOhms-----3 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 Cable Pull (2 signal and 2 ground LLCR test points)**Signal Pin**

- **Initial** -----58.09 mOhms Max
- **10 Ib Retention**
 - <= +5.0 mOhms-----2 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

Ground Pin

- **Initial** -----6.40 mOhms Max
- **10 Ib Retention**
 - <= +5.0 mOhms-----2 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 Durability (4 signal and 4 ground LLCR test points)****Signal Pin**

- **Initial** ----- 58.84 mOhms Max
- **Durability, 500 Cycles**
 - **<= +5.0 mOhms**-----4 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

Ground Pin

- **Initial** -----6.52 mOhms Max
- **Durability, 500 Cycles**
 - **<= +5.0 mOhms**-----4 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

DATA SUMMARIES**Cable Pull Force:
0° Pull**

92SJ	Force (lbs)
Minimum	45.93
Maximum	46.84
Average	46.39

92SP	Force (lbs)
Minimum	49.46
Maximum	50.17
Average	49.82

INSULATION RESISTANCE (IR):

Pin to Ground	
Mated	
Minimum	RF085/RF085
Initial	45000
Thermal Shock	45000

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

Pin to Ground (500 VAC)	
Initial Test Voltage	Pass
After Thermal Shock Test Voltage	Pass

DATA SUMMARIES Continued**LENGTH & MASS****Mating/Unmating Durability Group**

92SJ	Length (mm)	Mass (g)
1	154.78	7.407
2	153.99	7.397
3	153.99	7.372
4	153.19	7.387
Min	153.19	7.372
Max	154.78	7.407
Avg	153.99	7.391

92SP	Length (mm)	Mass (g)
1	153.19	8.545
2	153.99	8.52
3	153.19	8.53
4	153.99	8.518
Min	153.19	8.518
Max	153.99	8.545
Avg	153.59	8.528

IR/DWV Group

92SJ	Length (mm)	Mass (g)
1	1006.48	24.593
2	1004.89	24.108
3	998.54	24.012
4	1005.68	23.937
Min	998.54	23.937
Max	1006.48	24.593
Avg	1003.90	24.163

92SP	Length (mm)	Mass (g)
1	1008.86	25.123
2	1004.89	25.192
3	1005.68	25.162
4	1008.86	25.191
Min	1004.89	25.123
Max	1008.86	25.192
Avg	1007.0725	25.167

Cable Pull Group

92SJ	Length (mm)	Mass (g)
9	153.99	7.372
10	153.99	7.384

92SP	Length (mm)	Mass (g)
11	153.99	8.550
12	153.99	8.515

DATA SUMMARIES Continued**INTERFACE GAGING****Mating/Unmating Durability Group**

Gaging (.003 / .000) (in)			
92SJ	Initial	500 Cycles	Deltas
1	0.00252	0.00102	0.0015
2	0.00158	0.0026	0.00102
3	0.00043	0.00169	0.00126
4	0.00118	0.00024	0.00094
Min	0.00043	0.00024	0.00094
Max	0.00252	0.00260	0.00150
Avg	0.00143	0.00139	0.00118

Gaging (.003 / .000) (in)			
92SP	Initial	500 Cycles	Deltas
1	0.00146	0.00276	0.0013
2	0.00063	0.00012	0.00051
3	0.00252	0.0011	0.00142
4	0.00169	0.00051	0.00118
Min	0.00063	0.00012	0.00051
Max	0.00252	0.00276	0.00142
Avg	0.00158	0.00112	0.00110

IR/DWV Group

Gaging (.003 / .000) (in)			
92SJ	Initial	500 Cycles	Deltas
1	0.00256	0.00134	0.00122
2	0.00106	0.00122	0.00016
3	0.00012	0.00102	0.0009
4	0.00028	0.00197	0.00169
Min	0.00012	0.00102	0.00016
Max	0.00256	0.00197	0.00169
Avg	0.00101	0.00139	0.00099

Gaging (.003 / .000) (in)			
92SP	Initial	500 Cycles	Deltas
1	0.00193	0.00252	0.00059
2	0.00252	0.00197	0.00055
3	0.00177	0.00154	0.00023
4	0.00327	0.00355	0.00028
Min	0.00177	0.00154	0.00023
Max	0.00327	0.00355	0.00059
Avg	0.00237	0.00240	0.00041

Cable Pull Group

Gaging (.003 / .000) (in)			
92SJ	Initial	Retention	Delta
13	0.00020	0.00087	0.00067
14	0.00032	0.00102	0.00070

Gaging (.003 / .000) (in)			
92SP	Initial	Retention	Delta
13	0.00193	0.00287	0.00094
14	0.00291	0.00284	0.00070

DATA SUMMARIES Continued**LLCR Durability:**

- 1) A total of 4 signal and 4 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. $\leq +5.0$ 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 $+1000$ mOhms: -----Unstable
 - f. $>+1000$ mOhms: -----Open Failure

LLCR Measurement Summaries by Pin Type				
Date	12/12/2019	1/18/2020		
Room Temp (Deg C)	22	23		
Rel Humidity (%)	35	41		
Technician	Tony Wagoner	Tony Wagoner		
mOhm values	Actual	Delta		
	Initial	500 Cycles		
Pin Type: Signal 1				
Average	57.96	0.76		
St. Dev.	0.7	0.61		
Min	57.17	0.12		
Max	58.84	1.5		
Summary Count	4	4		
Total Count	4	4		
Pin Type: GND 1				
Average	6.49	1.11		
St. Dev.	0.03	0.46		
Min	6.46	0.56		
Max	6.52	1.67		
Summary Count	4	4		
Total Count	4	4		

LLCR Delta Count by Category						
	Stable	Minor	Acceptable	Marginal	Unstable	Open
mOhms	≤ 5	$>5 \text{ \& } \leq 10$	$>10 \text{ \& } \leq 15$	$>15 \text{ \& } \leq 50$	$>50 \text{ \& } \leq 1000$	>1000
500 Cycles	8	0	0	0	0	0

DATA SUMMARIES Continued**LLCR IR/DWV:**

- 1) A total of 4 signal and 4 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. $\leq +5.0$ 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 $+1000$ mOhms: -----Unstable
 - f. $>+1000$ mOhms: -----Open Failure

LLCR Measurement Summaries by Pin Type				
Date	12/12/2019	12/19/2019		
Room Temp (Deg C)	23	22		
Rel Humidity (%)	35	35		
Technician	Tony Wagoner	Tony Wagoner		
mOhm values	Actual	Delta		
	Initial	Thermal Shock		
Pin Type: Signal 1				
Average	388.16	0.48		
St. Dev.	0.58	0.42		
Min	387.65	0.14		
Max	388.86	1.09		
Summary Count	4	4		
Total Count	4	4		
Pin Type: GND 1				
Average	43.96	5.38		
St. Dev.	1.16	0.77		
Min	42.84	4.28		
Max	45.58	6.05		
Summary Count	4	4		
Total Count	4	4		

LLCR Delta Count by Category						
	Stable	Minor	Acceptable	Marginal	Unstable	Open
mOhms	≤ 5	$>5 \text{ \& } \leq 10$	$>10 \text{ \& } \leq 15$	$>15 \text{ \& } \leq 50$	$>50 \text{ \& } \leq 1000$	>1000
Thermal Shock	5	3	0	0	0	0

DATA SUMMARIES Continued**LLCR Cable Pull:**

- 1) A total of 2 signal and 2 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. $\leq +5.0$ 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 $+1000$ mOhms: -----Unstable
 - f. $>+1000$ mOhms: -----Open Failure

LLCR Measurement Summaries by Pin Type				
Date	12/12/2019	12/31/2019		
Room Temp (Deg C)	22	22		
Rel Humidity (%)	34	37		
Technician	Tony Wagoner	Tony Wagoner		
mOhm values	Actual	Delta		
	Initial	10lb Retention		
Pin Type: Signal 1				
Average	57.62	0.86		
St. Dev.	0.66	1.03		
Min	57.16	0.13		
Max	58.09	1.59		
Summary Count	2	2		
Total Count	2	2		
Pin Type: GND 1				
Average	6.36	0.03		
St. Dev.	0.06	0.04		
Min	6.31	0		
Max	6.4	0.05		
Summary Count	2	2		
Total Count	2	2		

LLCR Delta Count by Category						
	Stable	Minor	Acceptable	Marginal	Unstable	Open
mOhms	≤ 5	$>5 \text{ \& } \leq 10$	$>10 \text{ \& } \leq 15$	$>15 \text{ \& } \leq 50$	$>50 \text{ \& } \leq 1000$	>1000
10lb Retention	4	0	0	0	0	0

EQUIPMENT AND CALIBRATION SCHEDULES**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: 05/29/2019, Next Cal: 05/29/2020**Equipment #:** MO-11**Description:** Switch/Multimeter**Manufacturer:** Keithley**Model:** 3706**Serial #:** 120169**Accuracy:** See Manual

... Last Cal: 09/11/2019, Next Cal: 09/11/2020

Equipment #: TSC-01**Description:** Vertical Thermal Shock Chamber**Manufacturer:** Cincinnati Sub Zero**Model:** VTS-3-6-6-SC/AC**Serial #:** 10-VT14993**Accuracy:** See Manual

... Last Cal: 06/30/2019, Next Cal: 06/30/2020

Equipment #: HPT-01**Description:** Hipot Safety Tester**Manufacturer:** Vitrek**Model:** V73**Serial #:** 019808**Accuracy:**

... Last Cal: 05/15/2019, Next Cal: 05/15/2020