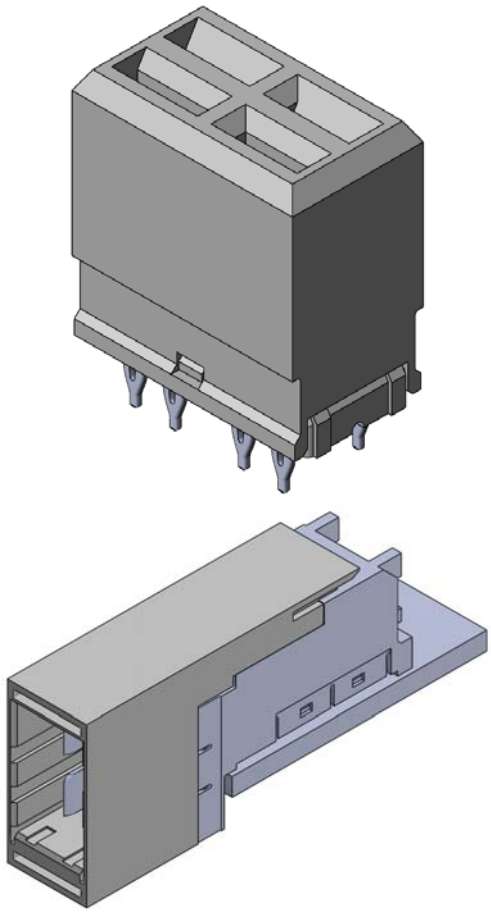
Project Number: Design Qualification Test Report	Tracking Code: 1377821_Report_Rev_1
Requested by: Kaelin Love	Date: 3/13/2018
Part #: HPTS-3-S-D-VT/SUB-HPTT-3-S-6-6-D-RA	
Part description: HPTS/SUB-HPTT	Tech: Tony Wagoner
Test Start: 1/15/2018	Test Completed: 2/1/2018



DESIGN QUALIFICATION TEST REPORT

HPTS/SUB-HPTT
HPTS-3-S-D-VT/SUB-HPTT-3-S-6-6-D-RA

REVISION HISTORY

DATA	REV.NUM.	DESCRIPTION	ENG
3/13/2018	**1**	**Initial Issue**	**KH**

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) Parts not intended for testing LLCR are visually inspected and cleaned if necessary.
4) Any additional preparation will be noted in the individual test sequences.
5) Samtec Test PCBs used: PCB-108746-TST/PCB-108747-TST

FLOWCHARTS

Gas Tight

Group 1
HPTS-3-S-D-VT
SUB-HPTT-3-S-6-6-D-RA
8 Assemblies

Step	Description
1.	LLCR (2)
2.	Gas Tight (1)
3.	LLCR (2) Max Delta = 15 mOhm

(1) Gas Tight = EIA-364-36

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

Normal Force

Group 1
HPTS-3-S-D-VT
SUB-HPTT-3-S-6-6-D-RA
8 Contacts Minimum
Power Without Thermals

Step	Description
1.	Contact Gaps
2.	Normal Force (1) Deflection = 0.010 " Expected Force at Max Deflection = 100 g

Group 2
HPTS-3-S-D-VT
SUB-HPTT-3-S-6-6-D-RA
8 Contacts Minimum
Power With Thermals

Step	Description
1.	Contact Gaps
2.	Thermal Age (2)
3.	Contact Gaps
4.	Normal Force (1) Deflection = 0.010 " Expected Force at Max Deflection = 100 g

(1) Normal Force = EIA-364-04

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

FLOWCHARTS Continued

IR/DWV

Pin-to-Pin

Group 1 HPTS-3-S-D-VT SUB-HPTT-3-S-6-6-D-RA 2 Assemblies		Group 2 HPTS-3-S-D-VT 2 Assemblies		Group 3 SUB-HPTT-3-S-6-6-D-RA 2 Assemblies		Group 4 HPTS-3-S-D-VT SUB-HPTT-3-S-6-6-D-RA 2 Assemblies	
Step	**Description**	**Step**	**Description**	**Step**	**Description**	**Step**	**Description**
1.	DWV Breakdown (2)	1.	DWV Breakdown (2)	1.	DWV Breakdown (2)	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)

Row-to-Row

Group 5 HPTS-3-S-D-VT SUB-HPTT-3-S-6-6-D-RA 2 Assemblies		Group 6 HPTS-3-S-D-VT 2 Assemblies		Group 7 SUB-HPTT-3-S-6-6-D-RA 2 Assemblies		Group 8 HPTS-3-S-D-VT SUB-HPTT-3-S-6-6-D-RA 2 Assemblies	
Step	**Description**	**Step**	**Description**	**Step**	**Description**	**Step**	**Description**
1.	DWV Breakdown (2)	1.	DWV Breakdown (2)	1.	DWV Breakdown (2)	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)

FLOWCHARTS Continued

Current Carrying Capacity

Group 1 HPTS-3-S-D-VT SUB-HPTT-3-S-6-6-D-RA 2 Pins Powered Power		Group 2 HPTS-3-S-D-VT SUB-HPTT-3-S-6-6-D-RA 4 Pins Powered Power	
Step	**Description**	**Step**	**Description**
1.	CCC (1) Rows = 2 Number of Positions = 1	1.	CCC (1) Rows = 2 Number of Positions = 2

(1) CCC = EIA-364-70
Method 2, Temperature Rise Versus Current Curve
(TIN PLATING) - Tabulate calculated current at RT, 65°C, 75°C and 95°C after derating 20% and based on 105°C
(GOLD PLATING) - Tabulate calculated current at RT, 85°C, 95°C and 115°C after derating 20% and based on 125°C

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 at 105° C.
3) Test Time Condition B for 250 hours.
4) All test samples are pre-conditioned at ambient.
5) All test samples are exposed to environmental stressing in the mated condition.

THERMAL SHOCK:

1) EIA-364-32, *Thermal Shock (Temperature Cycling) Test Procedure for Electrical Connectors.*
2) Test Condition: -65°C to +150°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.

NORMAL FORCE (FOR CONTACTS TESTED OUTSIDE THE HOUSING):

1) Reference document: EIA-364-04, *Normal Force Test Procedure for Electrical Connectors*.
2) The contacts shall be tested in the loose state, *not* inserted in connector housing.
3) The contacts shall be prepared to allow access to the spring member at the same attitude and deflection level as would occur in actual use.
4) In the event that portions of the contact prevent insertion of the test probe and/or deflection of the spring member under evaluation, said material shall be removed leaving the appropriate contact surfaces exposed.
5) In the case of multi-tine contacts, each tine shall be tested independently on separate samples as required.
6) The connector housing shall be simulated, if required, in order to provide an accurate representation of the actual contact system performance.
7) A holding fixture shall be fashioned to allow the contact to be properly deflected.
8) Said holding fixture shall be mounted on a floating, adjustable, X-Y table on the base of the Dillon TC^2, computer controlled test stand with a deflection measurement system accuracy of 5 µm (0.0002”).
9) The probe shall be attached to a Dillon P/N 49761-0105, 5 N (1.1 Lb) load cell providing an accuracy of ± 0.2%.
10) The nominal deflection rate shall be 5 mm (0.2”)/minute.
11) Unless otherwise noted a minimum of five contacts shall be tested.
12) The force/deflection characteristic to load and unload each contact shall be repeated five times.
13) The system shall utilize the TC^2 software in order to acquire and record the test data.
14) The permanent set of each contact shall be measured within the TC^2 software.
15) The acquired data shall be graphed with the deflection data on the X-axis and the force data on the Y-axis and a print out will be stored with the Tracking Code paperwork.

ATTRIBUTE DEFINITIONS Continued

The following is a brief, simplified description of attributes

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 four temperature points are reported:
    a. Ambient
    b. 110^{o} C
    c. 120^{o} C
    d. 140^{o} C
8) Typically, neighboring contacts (in close proximity to maximize heat build up) are energized.
9) The thermocouple (or temperature measuring probe) will be positioned at a location to sense the maximum temperature in the vicinity of the heat generation area.
10) A computer program, *TR 803.exe*, ensures accurate stability for data acquisition.
11) Hook-up wire cross section is larger than the cross section of any connector leads/PC board traces, jumpers, etc.
12) Hook-up wire length is longer than the minimum specified in the referencing standard.

ATTRIBUTE DEFINITIONS Continued

The following is a brief, simplified description of attributes

LLCR:

1) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets.*
2) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
3) The following guidelines are used to categorize the changes in LLCR as a result from stressing
    a. <= +5.0 mOhms: ---------- Stable
    b. +5.1 to +10.0 mOhms:---------- Minor
    c. +10.1 to +15.0 mOhms: ---------- Acceptable
    d. +15.1 to +50.0 mOhms: ---------- Marginal
    e. +50.1 to +2000 mOhms: ---------- Unstable
    f. >+2000 mOhms:---------- Open Failure

GAS TIGHT:

To provide method for evaluating the ability of the contacting surfaces in preventing penetration of harsh vapors which might lead to oxide formation that may degrade the electrical performance of the contact system.

1) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets*.
2) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
3) The following guidelines are used to categorize the changes in LLCR as a result from stressing
    a. <= +5.0 mOhms: ---------- Stable
    b. +5.1 to +10.0 mOhms:---------- Minor
    c. +10.1 to +15.0 mOhms: ---------- Acceptable
    d. +15.1 to +50.0 mOhms: ---------- Marginal
    e. +50.1 to +2000 mOhms: ---------- Unstable
    f. >+2000 mOhms:---------- Open Failure
4) Procedure:
    g. Reference document: EIA-364-36, *Test Procedure for Determination of Gas-Tight Characteristics for Electrical Connectors, Sockets and/or Contact Systems*.
    h. Test Conditions:
        i. Class II--- Mated pairs of contacts assembled to their plastic housings.
        ii. Reagent grade Nitric Acid shall be used of sufficient volume to saturate the test chamber
        iii. The ratio of the volume of the test chamber to the surface area of the acid shall be 10:1.
        iv. The chamber shall be saturated with the vapor for at least 15 minutes before samples are added.
        v. Exposure time, 55 to 65 minutes.
        vi. The samples shall be no closer to the chamber walls than 1 inches and no closer to the surface of the acid than 3 inches.
        vii. The samples shall be dried after exposure for a minimum of 1 hour.
        viii. Drying temperature 50^{o} C
        ix. The final LLCR shall be conducted within 1 hour after drying.

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).

RESULTS

Temperature Rise, CCC at a 20% de-rating

- **CCC for a 30°C Temperature Rise----------12.3 A per contact with 2 contacts (2x1) powered**
- **CCC for a 30°C Temperature Rise----------10.4 A per contact with 4 contacts (2x2) powered**

Normal Force at 0.0100 inch deflection

Long pin

- **Initial**
  - **Min----------37.30 gf Set ----- 0.0000 inch**
  - **Max ----------40.00 gf Set ----- 0.0003 inch**
- **Thermal**
  - **Min----------11.50 gf Set----- 0.0033 inch**
  - **Max ----------23.60 gf Set----- 0.0066 inch**

Short pin

- **Initial**
  - **Min----------61.60 gf Set ----- 0.0001 inch**
  - **Max ----------67.10 gf Set ----- 0.0002 inch**
- **Thermal**
  - **Min----------18.10 gf Set----- 0.0037 inch**
  - **Max ----------33.00 gf Set----- 0.0063 inch**

LLCR Gas Tight (16 row 1 and 16 row 2 LLCR test points)

Row 1

- **Initial----------1.25 mOhms Max**
- **Gas-Tight**
  - **<= +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 +2000 mOhms----------0 Points ---------- Unstable**
  - **>+2000 mOhms----------0 Points ---------- Open Failure**

Row 2

- **Initial----------1.18 mOhms Max**
- **Gas-Tight**
  - **<= +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 +2000 mOhms----------0 Points ---------- Unstable**
  - **>+2000 mOhms----------0 Points ---------- Open Failure**

RESULTS Continued

Insulation Resistance minimums, IR

Pin to Pin

- **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**

Row to Row

- **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---------- 1493 VAC**
  - **Test Voltage ---------- 1120 VAC**
  - **Working Voltage ----------370 VAC**

Pin to Pin

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

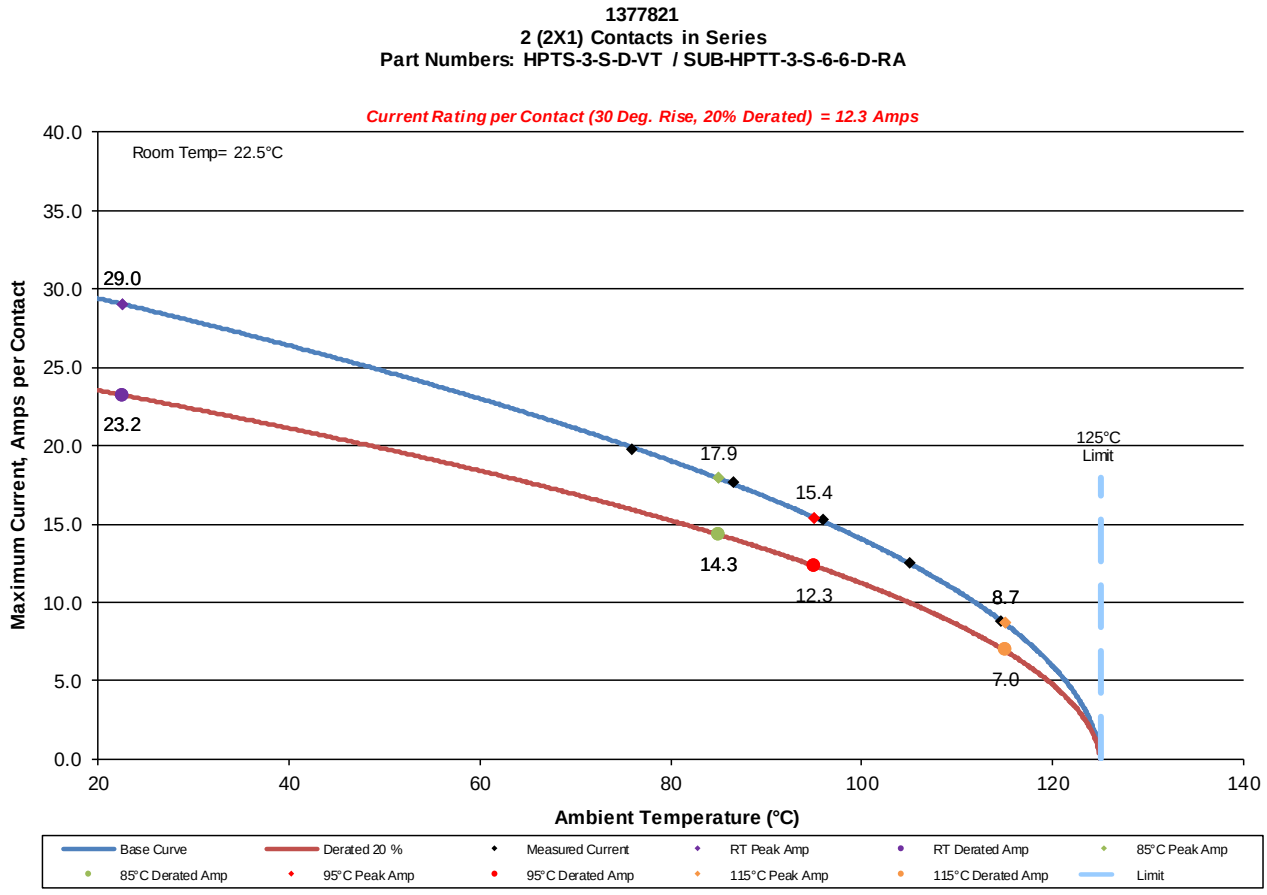
Row to Row

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

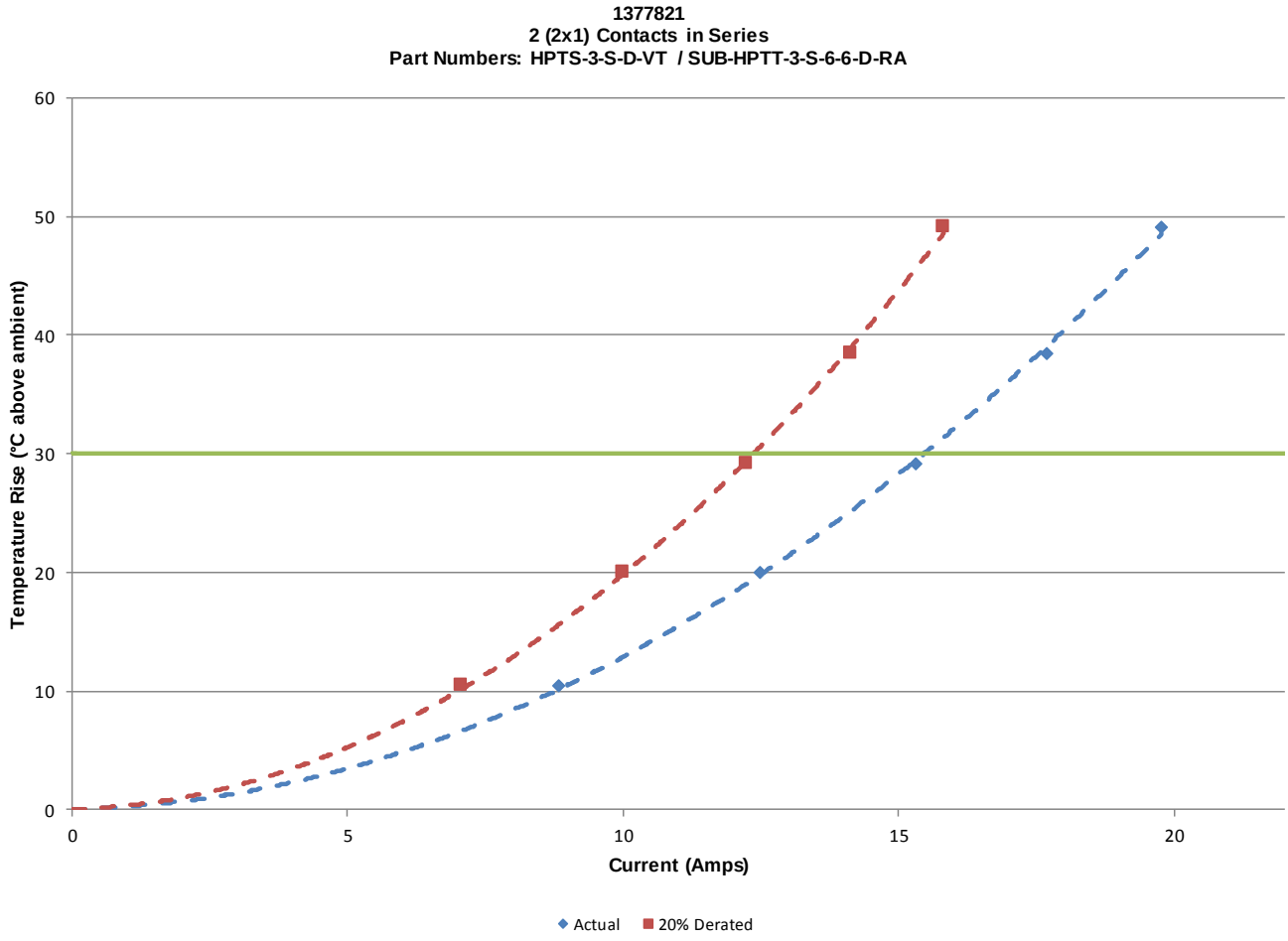
DATA SUMMARIES

TEMPERATURE RISE (Current Carrying Capacity, CCC):

1) High quality thermocouples whose temperature slopes track one another were used for temperature monitoring.
2) The thermocouples were placed at a location to sense the maximum temperature generated during testing.
3) Temperature readings recorded are those for which three successive readings, 15 minutes apart, differ less than 1° C (Computer controlled data acquisition).
4) Adjacent contacts were powered:
    a. Linear configuration with 2 adjacent conductors/contacts powered

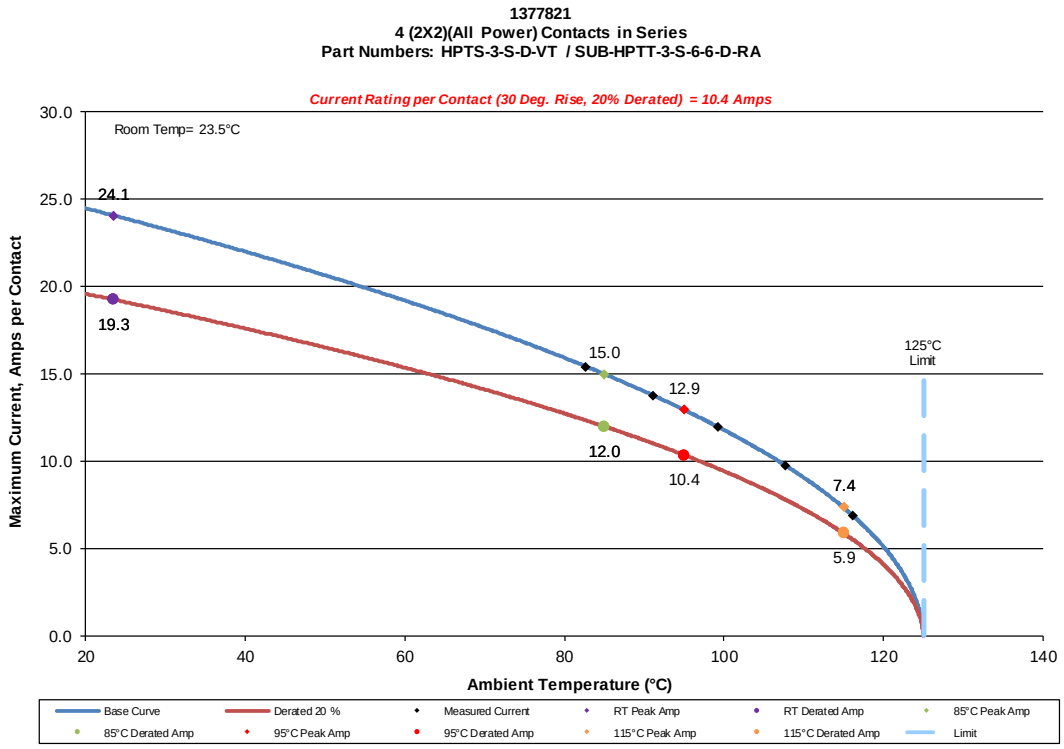


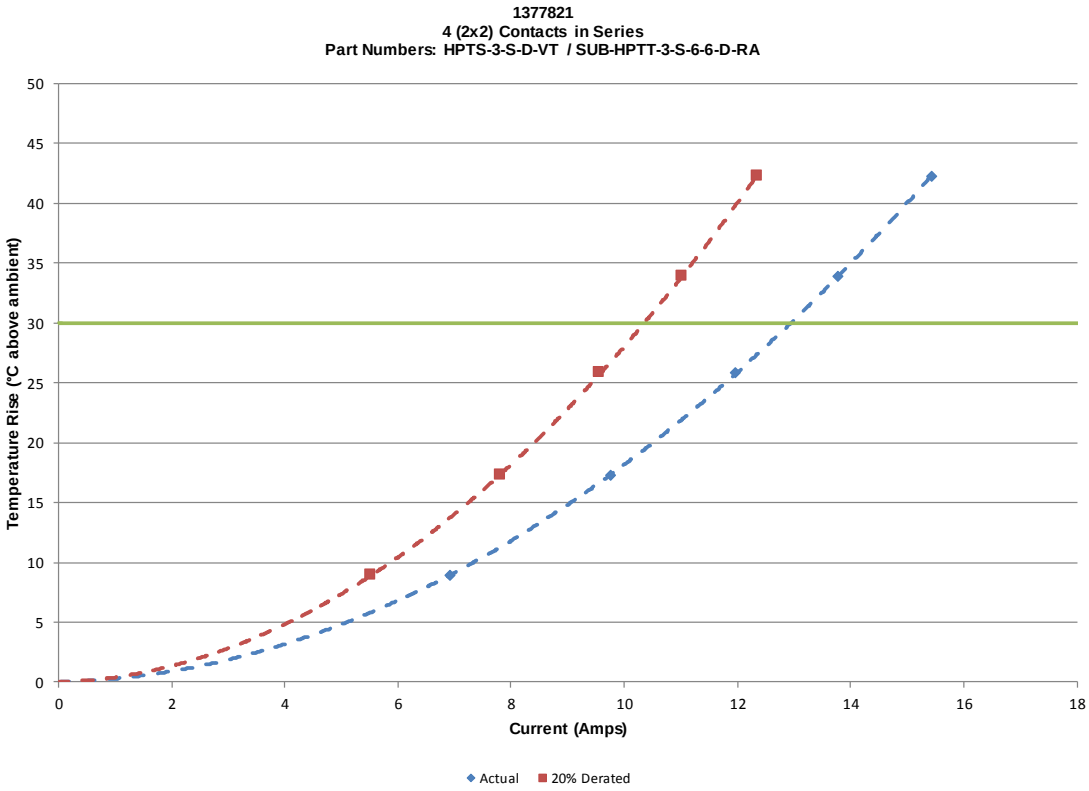
Tracking Code: 1377821_Report_Rev_1	Part #: HPTS-3-S-D-VT/SUB-HPTT-3-S-6-6-D-RA
Part description: HPTS/SUB-HPTT	



DATA SUMMARIES Continued

b. Linear configuration with 4 adjacent conductors/contacts powered





DATA SUMMARIES Continued

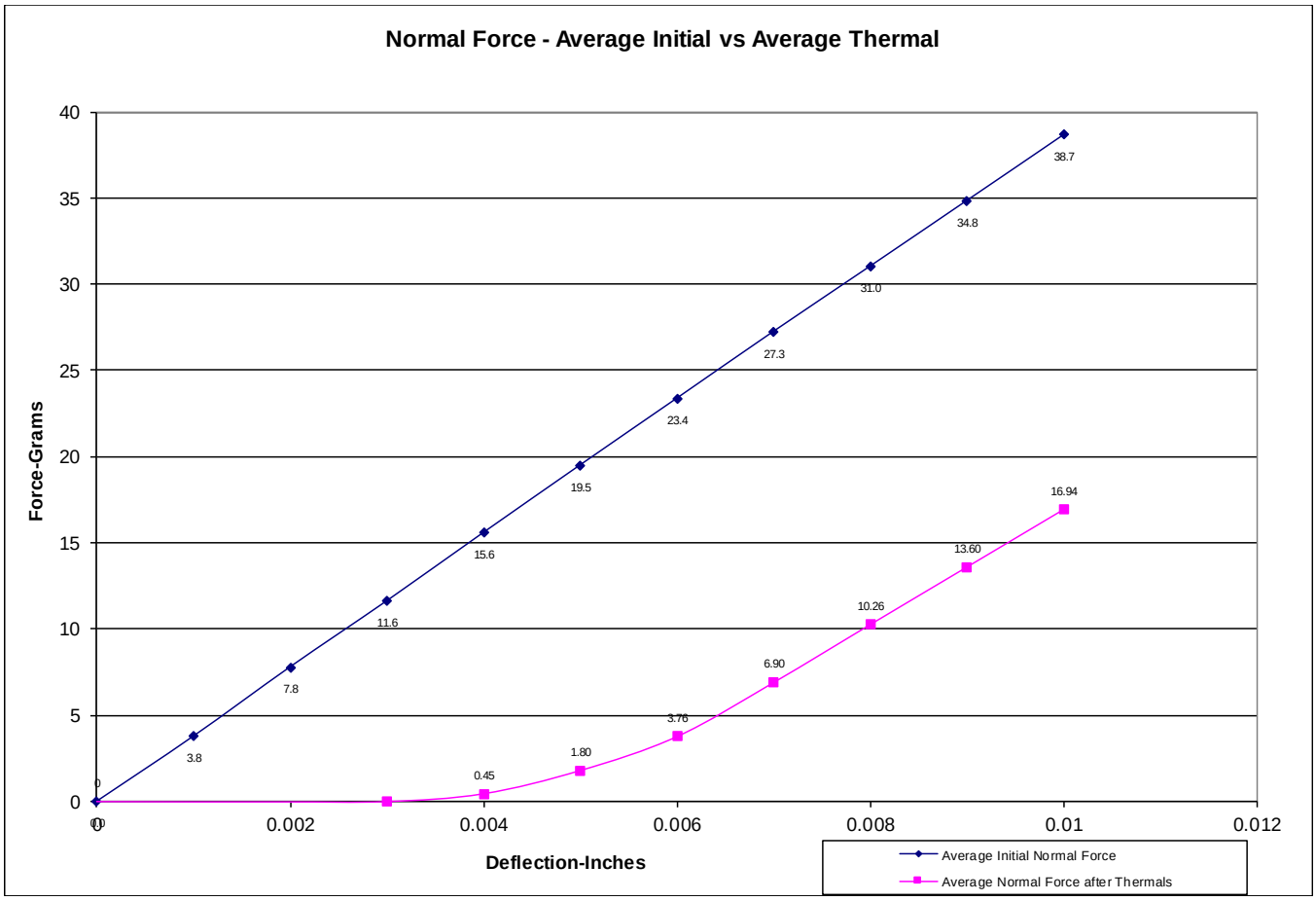
NORMAL FORCE (FOR CONTACTS TESTED OUTSIDE THE HOUSING):

1) Calibrated force gauges are used along with computer controlled positioning equipment.
2) Typically, 8-10 readings are taken and the averages reported.

Long Pin

Initial	Deflections in inches Forces in Grams										
	0.0010	**0.0020**	**0.0030**	**0.0040**	**0.0050**	**0.0060**	**0.0070**	**0.0080**	**0.0090**	**0.0100**	***SET***
Averages	3.78	7.79	11.63	15.59	19.50	23.38	27.25	31.04	34.84	38.66	0.0001
Min	3.10	7.20	10.80	14.90	18.80	22.50	26.40	30.00	33.80	37.30	0.0000
Max	4.10	8.20	12.10	16.30	20.30	24.10	28.20	32.10	36.00	40.00	0.0003
St. Dev	0.301	0.309	0.459	0.497	0.521	0.625	0.731	0.862	0.946	1.077	0.0001
Count	8	8	8	8	8	8	8	8	8	8	8

After Thermals	Deflections in inches Forces in Grams										
	0.0010	**0.0020**	**0.0030**	**0.0040**	**0.0050**	**0.0060**	**0.0070**	**0.0080**	**0.0090**	**0.0100**	***SET***
Averages	-0.01	-0.01	0.00	0.45	1.80	3.76	6.90	10.26	13.60	16.94	0.0050
Min	-0.10	-0.10	0.00	0.00	0.00	0.00	1.30	4.80	8.20	11.50	0.0033
Max	0.00	0.00	0.00	2.60	6.10	9.60	13.20	16.50	20.10	23.60	0.0066
St. Dev	0.035	0.035	0.000	0.923	2.387	3.824	4.234	4.160	4.275	4.370	0.0012
Count	8	8	8	8	8	8	8	8	8	8	8



DATA SUMMARIES Continued

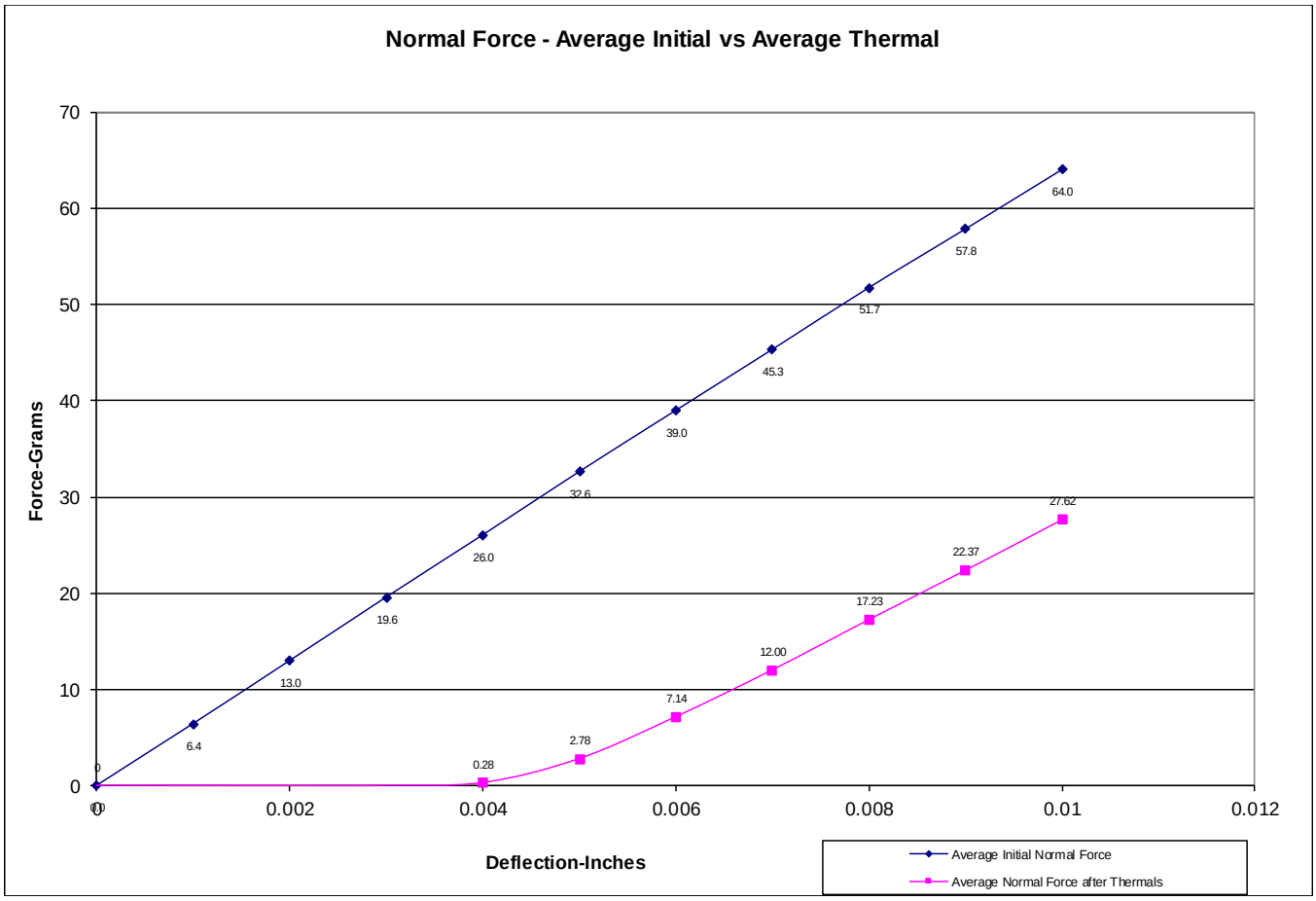
NORMAL FORCE (FOR CONTACTS TESTED OUTSIDE THE HOUSING):

1) Calibrated force gauges are used along with computer controlled positioning equipment.
2) Typically, 8-10 readings are taken and the averages reported.

Short Pin

Initial	Deflections in inches Forces in Grams										
	0.0010	0.0020	0.0030	0.0040	0.0050	0.0060	0.0070	0.0080	0.0090	0.0100	*SET*
Averages	6.43	12.97	19.57	26.04	32.62	38.98	45.33	51.74	57.84	64.03	0.0001
Min	6.20	12.50	18.90	25.10	31.70	37.70	43.70	49.90	55.80	61.60	0.0001
Max	7.30	14.10	20.90	27.40	34.60	41.00	47.30	54.10	60.30	67.10	0.0002
St. Dev	0.317	0.444	0.627	0.791	0.951	1.146	1.286	1.530	1.617	1.876	0.0000
Count	12	12	12	12	12	12	12	12	12	12	12

After Thermals	Deflections in inches Forces in Grams										
	0.0010	0.0020	0.0030	0.0040	0.0050	0.0060	0.0070	0.0080	0.0090	0.0100	*SET*
Averages	-0.02	-0.04	-0.01	0.28	2.78	7.14	12.00	17.23	22.37	27.62	0.0048
Min	-0.10	-0.10	-0.10	-0.10	-0.10	0.00	3.20	7.90	12.90	18.10	0.0037
Max	0.00	0.00	0.00	2.60	7.60	12.40	17.00	22.50	27.60	33.00	0.0063
St. Dev	0.039	0.051	0.029	0.752	2.763	4.167	4.425	4.477	4.596	4.740	0.0008
Count	12	12	12	12	12	12	12	12	12	12	12



DATA SUMMARIES Continued

INSULATION RESISTANCE (IR):

	Pin to Pin		
	Mated	Unmated	Unmated
Minimum	**HPTS/SUB-HPTT**	**HPTS**	**SUB-HPTT**
Initial	45000	45000	45000
Thermal	45000	45000	45000
Humidity	45000	45000	45000

	Row to Row		
	Mated	Unmated	Unmated
Minimum	**HPTS/SUB-HPTT**	**HPTS**	**SUB-HPTT**
Initial	45000	45000	45000
Thermal	45000	45000	45000
Humidity	45000	45000	45000

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

Voltage Rating Summary	
Minimum	**HPTS/SUB-HPTT**
Break Down Voltage	1493
Test Voltage	1120
Working Voltage	370

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

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

DATA SUMMARIES Continued

LLCR GAS TIGHT:

1) A total of 16 row 1 and 16 row 2 points were measured
2) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets.*
3) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
4) The following guidelines are used to categorize the changes in LLCR as a result from stressing.
   a. <= +5.0 mOhms: ---------- Stable
   b. +5.1 to +10.0 mOhms:---------- Minor
   c. +10.1 to +15.0 mOhms: ---------- Acceptable
   d. +15.1 to +50.0 mOhms: ---------- Marginal
   e. +50.1 to +2000 mOhms: ---------- Unstable
   f. >+2000 mOhms:---------- Open Failure

LLCR Measurement Summaries by Pin Type				
Date	1/15/2018	1/15/2018		
Room Temp (Deg C)	23	23		
Rel Humidity (%)	31	31		
Technician	Tony Wagoner	Tony Wagoner		
mOhm values	**Actual Initial**	**Delta Acid Vapor**	**Delta**	**Delta**
	Pin Type 1: Row 1			
Average	1.08	0.06		
St. Dev.	0.08	0.03		
Min	0.92	0.02		
Max	1.25	0.13		
Summary Count	16	16		
Total Count	16	16		
	Pin Type 2: Row 2			
Average	1.09	0.05		
St. Dev.	0.05	0.05		
Min	1.01	0.00		
Max	1.18	0.19		
Summary Count	16	16		
Total Count	16	16		

LLCR Delta Count by Category						
	Stable	**Minor**	**Acceptable**	**Marginal**	**Unstable**	**Open**
mOhms	**<=5**	**>5 & <=10**	**>10 & <=15**	**>15 & <=50**	**>50 & <=1000**	**>1000**
Acid Vapor	**32**	**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: 05/29/2017, Next Cal: 05/29/2018

Equipment #: MO-11
Description: Switch/Multimeter
Manufacturer: Keithley
Model: 3706
Serial #: 120169
Accuracy: See Manual
… Last Cal: 09/11/2017, Next Cal: 09/11/2018

Equipment #: THC-05
Description: Temperature/Humidity Chamber (Chamber Room)
Manufacturer: Thermotron
Model: SM-8-3800
Serial #: 05 23 00 02
Accuracy: See Manual
… Last Cal: 11/14/2017, Next Cal: 05/31/2018

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: 06/30/2017, Next Cal: 06/30/2018

Equipment #: HPT-01
Description: Hipot Safety Tester
Manufacturer: Vitrek
Model: V73
Serial #: 019808
Accuracy:
… Last Cal: 05/15/2017, Next Cal: 05/15/2018

Equipment #: PS-02
Description: Power Supply
Manufacturer: Hewlett-Packer
Model: 6033A
Serial #: N/A
Accuracy: See Manual
… Last Cal: NOT CALIBRATED

EQUIPMENT AND CALIBRATION SCHEDULES

Equipment #: MO-04
Description: Multimeter /Data Acquisition System
Manufacturer: Keithley
Model: 2700
Serial #: 0798688
Accuracy: See Manual
… Last Cal: 09/11/2017, Next Cal: 09/11/2018