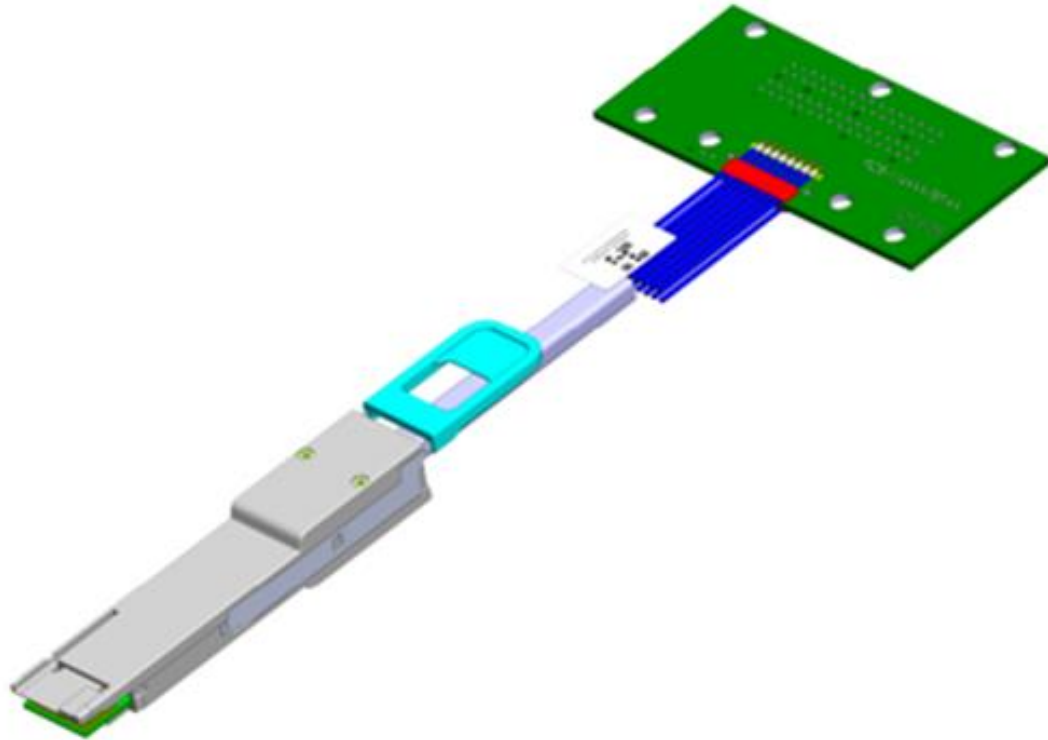


Project Number: Design Qualification Test Report	Tracking Code: CR-1357307_Report_Rev_1
Requested by: Cesar Wang	Date: 2/9/2026
Part #: NVACE-DP-1-4-1.0-C-6-1/QSFPC-1-1-S-N-F/FQSFP-DONOR-01-L-2-12	
Part description: NVACE/QSFPC	Tech: Keney Chen
Test Start: 12/14/2025	Test Completed: 1/9/2026



DESIGN QUALIFICATION TEST REPORT
NVACE/QSFPC
NVACE-DP-1-4-1.0-C-6-1/QSFPC-1-1-S-N-F/FQSFP-DONOR-01-L-2-12

Tracking Code: CR-1357307_Report_Rev_1	Part #: NVACE-DP-1-4-1.0-C-6-1/QSFPC-1-1-S-N-F/FQSFP-DONOR-01-L-2-12
Part description: NVACE/QSFPC	

REVISION HISTORY

DATA	REV.NUM.	DESCRIPTION	ENG
2/3/2026	1	Initial test	KC

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 and IR/DWV testing were cleaned according to CO-SC-WI-3029.
- 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-114498-TST-XX、PCB-114499-TST-XX、PCB-114471-TST-XX

FLOWCHARTS

IR/DWV

Note: (1)To use DVT-100027-2-06-P to test and DVT-100028-2-06-M for mating part. (2)To use panel(P/N:MAR-FQSFP-PANEL) in test.

Pin-to-Pin

<u>Group 1</u>	<u>Group 2</u>	<u>Group 3</u>	<u>Group 10</u>																														
NVACE-DP-1-4-1.0-C-6-1	QSFPC-1-1-S-N-F / FQSFP-DONOR-01-L-2-12	NVACE-DP-1-4-1.0-C-6-1	NVACE-DP-1-4-1.0-C-6-1																														
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Row-to-Row

<u>Group 4</u>	<u>Group 5</u>	<u>Group 6</u>	<u>Group 11</u>																														
NVACE-DP-1-4-1.0-C-6-1	QSFPC-1-1-S-N-F / FQSFP-DONOR-01-L-2-12	NVACE-DP-1-4-1.0-C-6-1	NVACE-DP-1-4-1.0-C-6-1																														
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Part description: NVACE/QSFPC

FLOWCHARTS Continued

Pin-to-Ground

<u>Group 7</u>		<u>Group 8</u>		<u>Group 9</u>		<u>Group 12</u>	
NVACE-DP-1-4-1.0-C-6-1		QSFPC-1-1-S-N-F / FQSFP-DONOR-01-L-2-12		NVACE-DP-1-4-1.0-C-6-1		NVACE-DP-1-4-1.0-C-6-1	
2 Assemblies		12		QSFPC-1-1-S-N-F / FQSFP-DONOR-01-L-2-12		QSFPC-1-1-S-N-F / FQSFP-DONOR-01-L-2-12	
		2 Assemblies		2 Assemblies		2 Assemblies	
Step	Description	Step	Description	Step	Description	Step	Description
1.	DWV Breakdown (2)	1.	DWV Breakdown (2)	1.	IR (4)	1.	DWV Breakdown (2)
				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

Mechanical Shock/Random Vibration/LLCR

Note: (1)To use DVT-100027-1-12-P to test and DVT-100028-1-06-M for mating part. (2)To use panel(P/N:MAR-FQSFP-PANEL) in test.

Group 1

NVACE-DP-1-4-1.0-C-6-1

QSFPC-1-1-S-N-F / FQSFP-DONOR-01-L-2-12

5 Assemblies

Step	Description
1.	LLCR ⁽¹⁾
2.	Mechanical Shock ⁽²⁾ - Non Standard
3.	Random Vibration ⁽³⁾
4.	LLCR ⁽¹⁾ Max Delta = 15 mOhm

-
- (1) LLCR = EIA-364-23
Open Circuit Voltage = 20 mV Max
Test Current = 100 mA Max
- (2) Mechanical Shock = Other
EIA-364-27 Test Condition = H (30 G Peak, 11 milliseconds, Half Sine)
Number of Shocks = 3 Per Direction, Per Axis, 18 Total
- (3) Random Vibration = EIA-364-28
Condition = VB (7.56 gRMS Average, 2 Hours/Axis)

Mechanical Shock/Random Vibration/Event Detection

Note: (1)To use DVT-100027-3-12-P to test and DVT-100028-3-06-M for mating part. (2)To use panel(P/N:MAR-FQSFP-PANEL) in test.

Group 1

NVACE-DP-1-4-1.0-C-6-1

QSFPC-1-1-S-N-F / FQSFP-DONOR-01-L-2-12

60 Points

Step	Description
1.	Nanosecond Event Detection (Mechanical Shock) ⁽¹⁾ - Non Standard
2.	Nanosecond Event Detection (Random Vibration) ⁽²⁾

-
- (1) Nanosecond Event Detection (Mechanical Shock) = Other
Use EIA-364-87 for Nanosecond Event Detection:
Test Condition = F (50 nanoseconds at 10 ohms)
Use EIA-364-27 for Mechanical Shock:
Test Condition = H (30 G Peak, 11 milliseconds, Half Sine)
Number of Shocks = 3 Per Direction, Per Axis, 18 Total
- (2) Nanosecond Event Detection (Random Vibration)
Use EIA-364-87 for Nanosecond Event Detection:
Test Condition = F (50 nanoseconds at 10 ohms)
Use EIA-364-28 for Random Vibration:
Condition = VB (7.56 gRMS Average, 2 Hours/Axis)

FLOWCHARTS Continued

Cable Pull

Note: (1)To use DVT-100027-4-12-P to test and DVT-100028-4-06-M for mating part. (2)To use panel(P/N:MAR-FQSFP-PANEL) in test.

<u>Group 1</u>	<u>Group 2</u>								
NVACE-DP-1-4-1.0-C-6-1 QSFPC-1-1-S-N-F / FQSFP-DONOR-01-L-2-12 3 Assemblies 0 Degrees	NVACE-DP-1-4-1.0-C-6-1 QSFPC-1-1-S-N-F / FQSFP-DONOR-01-L-2-12 3 Assemblies 90 Degrees								
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(1) Cable Pull = EIA-364-38
 Measure and Record Force Required to Failure
 Failure = Discontinuity >1 microsecond at 10 ohms

Cable Flex

Note: (1)To continuity in cable flex test, use DVT-100027-5-16-P to test and DVT-100028-5-06-M for mating part. (2)To IR/DWV in cable flex test, use DVT-100027-2-16-P to test and DVT-100028-2-06-M for mating part. (3)To use panel(P/N:MAR-FQSFP-PANEL) in test.

<u>Group 1</u>																								
NVACE-DP-1-4-1.0-C-6-1 QSFPC-1-1-S-N-F / FQSFP-DONOR-01-L-2-12 8 Assemblies Circular Cable																								
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11.	DWV at Test Voltage ⁽²⁾																							

(1) Cable Flex = EIA-364-41
 Circular Jacket Cable - to be tested 90° each direction (180° total)
 Flat Cable - to be tested 70° each direction (140° total)
 Monitor continuity during flex testing
 Failure = Discontinuity >1 microsecond at 10 ohms

(2) 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

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

FLOWCHARTS Continued

Latch Durability

Note: (1)To use DVT-100027-4-12-P to test and DVT-100028-4-06-M for mating part. (2)To use panel(P/N:MAR-FQSFP-PANEL) in test.

Group 1

NVACE-DP-1-4-1.0-C-6-1

QSFPC-1-1-S-N-F/FQSFP-DONOR-01-L-2-12

5 Assemblies

Aimed At QSFPC

Step	Description
1.	Photo
2.	Mating/Unmating Force ⁽²⁾ <i>Note: Mating: (QSFPC module: 60 N Max.) Amount of force needed to mate a module with a connector when latches are deactivated. Unmating: (QSFPC module: 30 N Max.) Amount of force needed to separate a module from a connector when latches are deactivated.</i>
3.	Cycles Quantity = 100 Cycles <i>Note: Manually pull back the black pull strap for each cycle.</i>
4.	Mating/Unmating Force ⁽²⁾ <i>Note: Mating: (QSFPC module: 60 N Max.) Amount of force needed to mate a module with a connector when latches are deactivated. Unmating: (QSFPC module: 30 N Max.) Amount of force needed to separate a module from a connector when latches are deactivated.</i>
5.	Photo
6.	Cable Pull ⁽¹⁾ <i>Note: With the latch still engaged, pull at 0 degree. (Latching mechanism can withstand without unmating). QSFPC module: 90N Min.</i>

(1) Cable Pull = EIA-364-38

Measure and Record Force Required to Failure

Failure = Discontinuity >1 microsecond at 10 ohms

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

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 I: -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.

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.

MECHANICAL SHOCK (Specified Pulse):

- 1) Reference document: EIA-364-27, *Mechanical Shock Test Procedure for Electrical Connectors*
- 2) Test Condition: H
- 3) Peak Value: 30 G
- 4) Duration: 11 Milliseconds
- 5) Wave Form: Half Sine
- 6) Velocity: 12.3 ft/s
- 7) Number of Shocks: 3 Shocks / Direction, 3 Axis (18 Total)

VIBRATION:

- 1) Reference document: EIA-364-28, *Vibration Test Procedure for Electrical Connectors*
- 2) Test Condition V, Letter B
- 3) Power Spectral Density: 0.04 G² / Hz
- 4) G ‘RMS’: 7.56
- 5) Frequency: 50 to 2000 Hz
- 6) Duration: 2.0 Hours per axis (3 axis total)

NANOSECOND-EVENT DETECTION:

- 1) Reference document: EIA-364-87, *Nanosecond-Event Detection for Electrical Connectors*
- 2) Prior to test, the samples were characterized to assure the low nanosecond event being monitored will trigger the detector.
- 3) After characterization it was determined the test samples could be monitored for 50 nanosecond events

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).

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

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
 - b. At 90°, in-line with cable



Fig. 1
0° Connector pull.



Fig. 2
90° Connector pull.

CABLE Flex:

- 1) Oscillate and monitor electrical continuity for open circuit indication.
 - a. $\pm 90^\circ$ Flex Mode, bend up to 100 cycles. load on 16 oz.



Fig. 3
(Standard setup)

RESULTS

Mating – Unmating Forces

Latch Durability Group

- **Initial**
 - **Mating**
 - **Min** ----- 3.69 lbs
 - **Max** ----- 4.57 lbs
 - **Unmating**
 - **Min** ----- 2.14 lbs
 - **Max** ----- 2.76 lbs
- **After 100 Cycles**
 - **Mating**
 - **Min** ----- 4.10 lbs
 - **Max** ----- 5.07 lbs
 - **Unmating**
 - **Min** ----- 2.83 lbs
 - **Max** ----- 4.03 lbs

Cable Pull force:

Latch Durability Group

- **0° Pull**
 - **Min** ----- 21.41 lbs
 - **Max** ----- 23.62 lbs

Cable Pull Group

- **0° Pull**
 - **Min** ----- 22.51 lbs
 - **Max** ----- 24.65 lbs
- **90° Pull**
 - **Min** ----- 46.97 lbs
 - **Max** ----- 55.21 lbs

RESULTS Continued

Cable Flex:

Insulation Resistance minimums, IR

Pin to Pin

- Initial
 - Mated-----45000Meg Ω ----- Passed
- After 100 flex cycles
 - Mated-----45000Meg Ω ----- Passed
- After 200 flex cycles
 - Mated-----45000Meg Ω ----- Passed

Row to Row

- Initial
 - Mated-----45000Meg Ω ----- Passed
- After 100 flex cycles
 - Mated-----45000Meg Ω ----- Passed
- After 200 flex cycles
 - Mated-----45000Meg Ω ----- Passed

Pin to Ground

- Initial
 - Mated-----45000Meg Ω ----- Passed
- After 100 flex cycles
 - Mated-----45000Meg Ω ----- Passed
- After 200 flex cycles
 - Mated-----45000Meg Ω ----- Passed

Dielectric Withstanding Voltage minimums, DWV

- Test Voltage -----416VAC

Pin to Pin

- Initial DWV -----Passed
- After 100 Flex cycles DWV -----Passed
- After 200 Flex cycles DWV -----Passed

Row to Row

- Initial DWV -----Passed
- After 100 Flex cycles DWV -----Passed
- After 200 Flex cycles DWV -----Passed

Pin to Ground

- Initial DWV -----Passed
- After 100 Flex cycles DWV -----Passed
- After 200 Flex cycles DWV -----Passed

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

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 -----554 VAC
 - Test Voltage -----416 VAC
 - Working Voltage -----139 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

Pin to Ground

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

RESULTS Continued

LLCR Shock & Vibration (45 LLCR test points)

- Initial Signal -----484.97 mOhms Max
- Initial Ground ----- 26.79 mOhms Max
- Shock &Vibration
 - <= +5.0 mOhms----- 45 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

Mechanical Shock & Random Vibration:

- Shock
 - No Damage----- Pass
 - 50 Nanoseconds ----- Pass
- Vibration
 - No Damage----- Pass
 - 50 Nanoseconds ----- Pass

DATA SUMMARIES

MATING/UNMATING:

Latch Durability Group

	Initial				100 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newton	Force (Lbs)	Newton	Force (Lbs)	Newton	Force (Lbs)	Newton	Force (Lbs)
Minimum	16.41	3.69	9.52	2.14	18.24	4.10	12.59	2.83
Maximum	20.33	4.57	12.28	2.76	22.55	5.07	17.93	4.03
Average	18.09	4.07	10.65	2.39	19.59	4.40	14.97	3.37
St Dev	1.49	0.34	1.16	0.26	1.73	0.39	2.61	0.59
Count	5	5	5	5	5	5	5	5

DATA SUMMARIES Continued

Cable Pull Force:

**Latch Durability Group
0° Pull**

	Force (lbs)
Minimum	21.41
Maximum	23.62
Average	22.47

**Latch Durability Group
0° Pull**

	Force (lbs)
Minimum	22.51
Maximum	24.65
Average	23.82

90° Pull

	Force (lbs)
Minimum	46.97
Maximum	55.21
Average	51.91

Latch Durability

Sample#	Initial Visual Inspection	100 Cycles	Final Visual Inspection
1	PASS	PASS	PASS
2	PASS	PASS	PASS
3	PASS	PASS	PASS
4	PASS	PASS	PASS
5	PASS	PASS	PASS

DATA SUMMARIES Continued

INSULATION RESISTANCE (IR):

Pin to Pin			
	Mated	Unmated	Unmated
Minimum	NVACE/QSFPC	NVACE	QSFPC
Initial	45000	45000	45000
Thermal	45000	45000	45000
Humidity	45000	45000	45000

Row to Row			
	Mated	Unmated	Unmated
Minimum	NVACE/QSFPC	NVACE	QSFPC
Initial	45000	45000	45000
Thermal	45000	45000	45000
Humidity	45000	45000	45000

Pin to Ground			
	Mated	Unmated	Unmated
Minimum	NVACE/QSFPC	NVACE	QSFPC
Initial	45000	45000	45000
Thermal	45000	45000	45000
Humidity	45000	45000	45000

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

Voltage Rating Summary	
Minimum	NVACE/QSFPC
Break Down Voltage	554
Test Voltage	416
Working Voltage	139

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

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

DATA SUMMARIES Continued

Cable Flex:

Insulation Resistance minimums, IR

Pin to Pin	
Mated	
Minimum	
Initial	45000
After 100 Flex Cycles	45000
After 200 Flex Cycles	45000
Row to Row	
Mated	
Minimum	
Initial	45000
After 100 Flex Cycles	45000
After 200 Flex Cycles	45000
Pin to Ground	
Mated	
Minimum	
Initial	45000
After 100 Flex Cycles	45000
After 200 Flex Cycles	45000

Dielectric Withstanding Voltage minimums, DWV

Voltage Rating Summary	
Minimum	
Test Voltage	416
Pin to Pin	
Initial Test Voltage	Passed
After 100 Flex Cycles Test Voltage	Passed
After 200 Flex Cycles Test Voltage	Passed
Row to Row	
Initial Test Voltage	Passed
After 100 Flex Cycles Test Voltage	Passed
After 200 Flex Cycles Test Voltage	Passed
Pin to Ground	
Initial Test Voltage	Passed
After 100 Flex Cycles Test Voltage	Passed
After 200 Flex Cycles Test Voltage	Passed

DATA SUMMARIES Continued

LLCR Shock & Vibration Group:

- 1). A total of 45 points were measured.
- 2). EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets.*
- 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 $+1000$ mOhms -----Unstable
 - f. $>+1000$ mOhms: -----Open Failure

LLCR Measurement Summaries by Pin Type				
Date	12/22/2025	1/6/2026		
Room Temp (Deg C)	22	22		
Rel Humidity (%)	34	43		
Technician	Brian Stemle	Brian Stemle		
mOhm values	Actual	Delta		
	Initial	Shock-Vib		
Pin Type: Signal 1				
Average	458.81	1.37		
St. Dev.	11.21	0.81		
Min	443.94	0.38		
Max	484.97	3.95		
Summary Count	40	40		
Total Count	40	40		
Pin Type: GND 1				
Average	26.14	1.05		
St. Dev.	0.41	0.51		
Min	25.7	0.45		
Max	26.79	1.63		
Summary Count	5	5		
Total Count	5	5		

LLCR Delta Count by Category						
mOhms	Stable	Minor	Acceptable	Marginal	Unstable	Open
	≤ 5	$>5 \ \& \ \leq 10$	$>10 \ \& \ \leq 15$	$>15 \ \& \ \leq 50$	$>50 \ \& \ \leq 1000$	>1000
Shock-Vib	45	0	0	0	0	0

Nanosecond Event Detection:

Shock and Vibration Event Detection Summary	
Contacts tested	40
Test Condition	H, 30g's, 11ms, Half-Sine
Shock Events	0
Test Condition	V-B, 7.56 rms g
Vibration Events	0
Total Events	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: 05/29/2025, Next Cal: 05/29/2026

Equipment #: MO-11

Description: Switch/Multimeter

Manufacturer: Keithley

Model: 3706

Serial #: 120169

Accuracy: See Manual

... Last Cal: 09/11/2025, Next Cal: 09/11/2026

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: 06/30/2025, Next Cal: 06/30/2026

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: 11/14/2025, Next Cal: 11/14/2026

Equipment #: HPT-01

Description: Hipot Safety Tester

Manufacturer: Vitrek

Model: V73

Serial #: 019808

Accuracy:

... Last Cal: 05/15/2025, Next Cal: 05/15/2026

Equipment #: PS-02

Description: Power Supply

Manufacturer: Hewlett-Packard

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: 09/11/2025, Next Cal: 09/11/2026

Equipment #: ACLM-01

Description: Accelerometer

Manufacturer: PCB Piezotronics

Model: 352C03

Serial #: 115819

Accuracy: See Manual

... Last Cal: 07/18/2025, Next Cal: 07/18/2026

Equipment #: ED-03

Description: Event Detector

Manufacturer: Analysis Tech

Model: 32EHD

Serial #: 1100604

Accuracy: See Manual

... Last Cal: 10/31/2025, Next Cal: 10/31/2026

Equipment #: SVC-01

Description: Shock & Vibration Table

Manufacturer: Data Physics

Model: LE-DSA-10-20K

Serial #: 10037

Accuracy: See Manual

... Last Cal: 04/22/2025, Next Cal: 04/22/2026

Equipment #: ACLM-01

Description: Accelerometer

Manufacturer: PCB Piezotronics

Model: 352C03

Serial #: 115819

Accuracy: See Manual

... Last Cal: 07/18/2025, Next Cal: 07/18/2026

Equipment #: ED-03

Description: Event Detector

Manufacturer: Analysis Tech

Model: 32EHD

Serial #: 1100604

Accuracy: See Manual

... Last Cal: 10/31/2025, Next Cal: 10/31/2026