



GT-14-38

SuperSeal D38999 Series RJ45

233-300 Series, Low Temp CAT5e RJ45 Coupler Vibration Performance Evaluation Test Report

233-300M07G195LN3
(Receptacle)



233-300MG6-195LN3
(Plug)





SuperSeal Series D38999 RJ45
Vibration Performance Evaluation Test Report

Revision History

Rev	Date	Approved	Description
A	5/20/2014	T.Yohannes	Initial Release



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PURPOSE



SuperSeal Series D38999 RJ45 Vibration Performance Evaluation Test Report

The purpose of the test was to perform vibration evaluation of Superseal D38999 Series III RJ45 connectors, 233-300 Series, Low Temp version. Sample connectors were subjected to three vibration test levels consecutively in order to determine their levels of performance. Sample connectors were tested for Ethernet compliance & electrical performance requirements after the vibration tests.

TEST SAMPLE CONNECTORS

Three mated sample connectors, S1, S2 & S3, were used to perform the test.

233-300M07G195LN3 - Receptacle, D38999 Series III, Shell size 19, with Low temp RJ45 Jack-Jack Coupler (PN 990-25055)

233- 300MG6-195LN3 - Plug, D38999 Series III, Shell Size 19, with low temp RJ45 Jack-Plug Coupler (PN 990-25056)

Sample 1 (S1) – mounted in the x – axis.

Sample 2 (S2) – mounted in the y – axis.

Sample 3 (S3) – mounted in the z – axis.

TEST SETUP

As shown under the test setup, an Electrodynamic Vibration System with a 4-channel vibration controller was used to perform the vibration test. A 32-channel event detector was used to monitor the discontinuity as well as a 10 mv/g accelerometer was used to measure the vibration.

TEST PARAMETERS

Sample connectors were subjected to three levels of vibration including:

10G SINE : Vibration test per EIA 364-28, Test Condition II, 10G Sine, 10-500 Hz, 4 hrs. One sample connector exposed on each axis (x, y, z) simultaneously and discontinuity more than 1 microsecond monitored during the test.

16.9G RANDOM : Vibration test per EIA 364-28, Test Condition V, letter E, 16.9G Random, 10-2000 Hz 4 hours. One sample connector exposed on each axis (x, y, z) simultaneously and discontinuity more than 1 microsecond monitored during the test.

20.7G RANDOM : Vibration test per EIA 364-28, Test Condition V, letter F, 20.7G Random, 10-2000 Hz for 4 hours. One sample connector exposed on each axis (x, y, z) simultaneously and discontinuity more than 1 microsecond monitored during the test.

ETHERNET COMPLIANCE TEST : RJ45 connector performance to be verified using Lantek II Series Cable Certifier per TIA standard for Category 5e for the following



SuperSeal Series D38999 RJ45 Vibration Performance Evaluation Test Report

characteristics: (Setup for Channel Link Test)
Insertion Loss, Return Loss, Impedance, Crosstalk (Next & Power Sum Next), ACR-N,
Wiremap & Resistance.

DIELECTRIC WITHSTANDING VOLTAGE (DWV) : The dielectric withstanding voltage shall be tested in accordance with IEC 60512-4-1, Test 4a, Method C, test voltage of 1000 VDC, with exception that test voltage shall be applied for 2 sec. The leakage current between adjacent contacts shall not be greater than 2 mA and there shall be no evidence of arcing, material breakdown, or any evidence of damage. Test can be performed in mated or unmated conditions.

INSULATION RESISTANCE (IR) : The insulation resistance shall be measured in accordance with IEC 60512-3-1, Test 3a, Method C, test voltage 500 VDC, with exception that test voltage shall be applied for 2 sec. The insulation resistance between adjacent contacts shall be at least 500 MΩ. Test can be performed in mated or unmated conditions.

RESULTS

All three sample connectors passed the first two levels of vibration tests, 10G Sine & 16.9G Random, respectively. During the last level of vibration test, 20.7G Random, pin 1 of sample connector 2 (S2) mounted in the y axis showed discontinuity after three and half hours. The other two sample connectors, S1 & S3, mounted in the x & z axis, respectively passed the test. All three sample connectors passed both electrical & RJ45 performance tests after the vibration test.

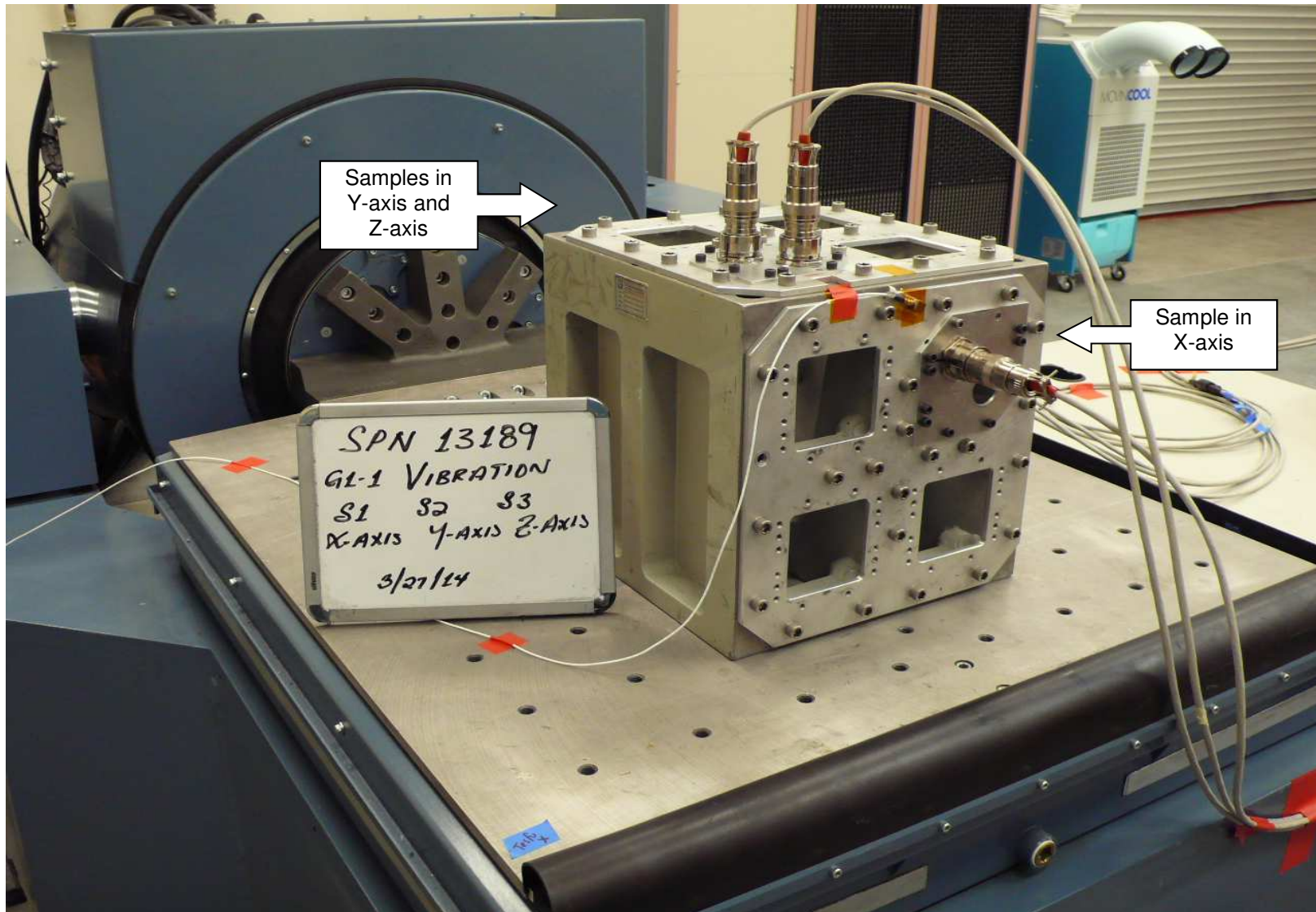
CONCLUSION

In conclusion, these three different levels of vibration performance tests confirmed that Glenair SuperSeal RJ45 Connectors Series 233-300 with low temp RJ45 inserts meet up to 20.7G Random vibration per EAI 364-28 requirements.

Test Datasheet

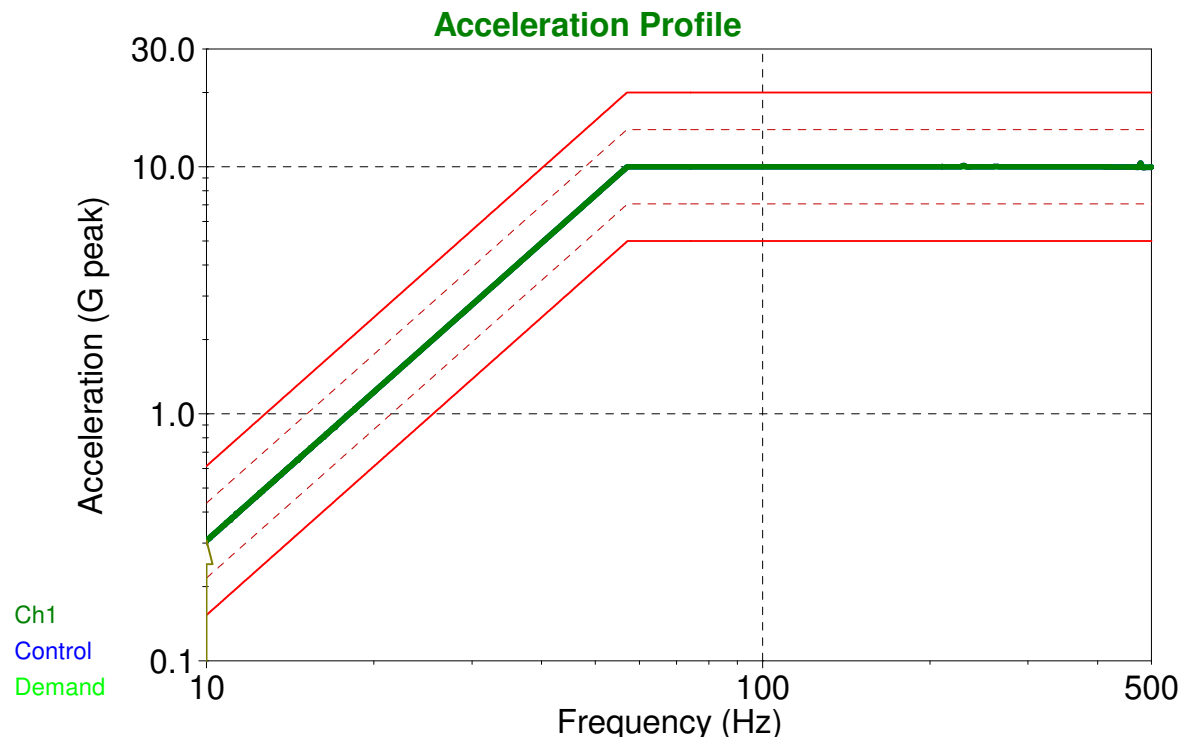
Start Date	Completion Date	Customer Name	Purchase Order #	Service Project Number SPN	Test ID #	Temperature	Humidity	DS Revision
3/27/2014	3/28/2014	Glenair	D140842	13189	G1-1	22.6°C	47.9%RH	3/28/2014
Test Title		Test Specification / Standard		Specific Test Conditions		Measurements / Inspection		
Vibration		EIA-364-28 EIA-364-46		Per EIA 364-28 Test Condition II 10G Sine, 10-500 Hz One DUT exposed on each axis (X, Y, Z) simultaneously. Monitor discontinuity >1 microsecond		Electrical Discontinuity Acceleration (g) Frequency (Hz)		
Anomaly / Interruption				Nonconformity / Deviation				
None				None				
Test Sample Description		Part Number		Exterior Test Procedure # (if applicable)			Customer Witness	
Ruggedized RJ45 Coupler connector (233-300 Series, Cat 5e Low Temp) Quantity: 3 mated pairs		233-300 Coupler Performance Test		Per referenced Test Specification / Standard			Tesfu Yohannes	
Project Engineer	Performed By		Bench Cleaning	Equipment List	Post Test Cleanup	Setup Check	Event Log	Signoff by Technical Director
Gloria Zelaya	JB	Signoff	JB	JB	JB	GZ/NM	GZ	john kim
		Date/Time	3/27/2014, 1:00 pm	3/27/2014, 2:00 pm	3/28/2014 9:30AM	3/27/2014 3:15PM	3/28/2014	
	Checked modifier is set to 100%			Checked accelerometer sensitivity				
Signoff	JB			JB				
Date/Time	3/27/2014, 3:15 pm			3/27/2014, 3:30 pm				
Date	Time	Event Log						Initials

TEST SETUP PICTURES





ACCELERATION PROFILE



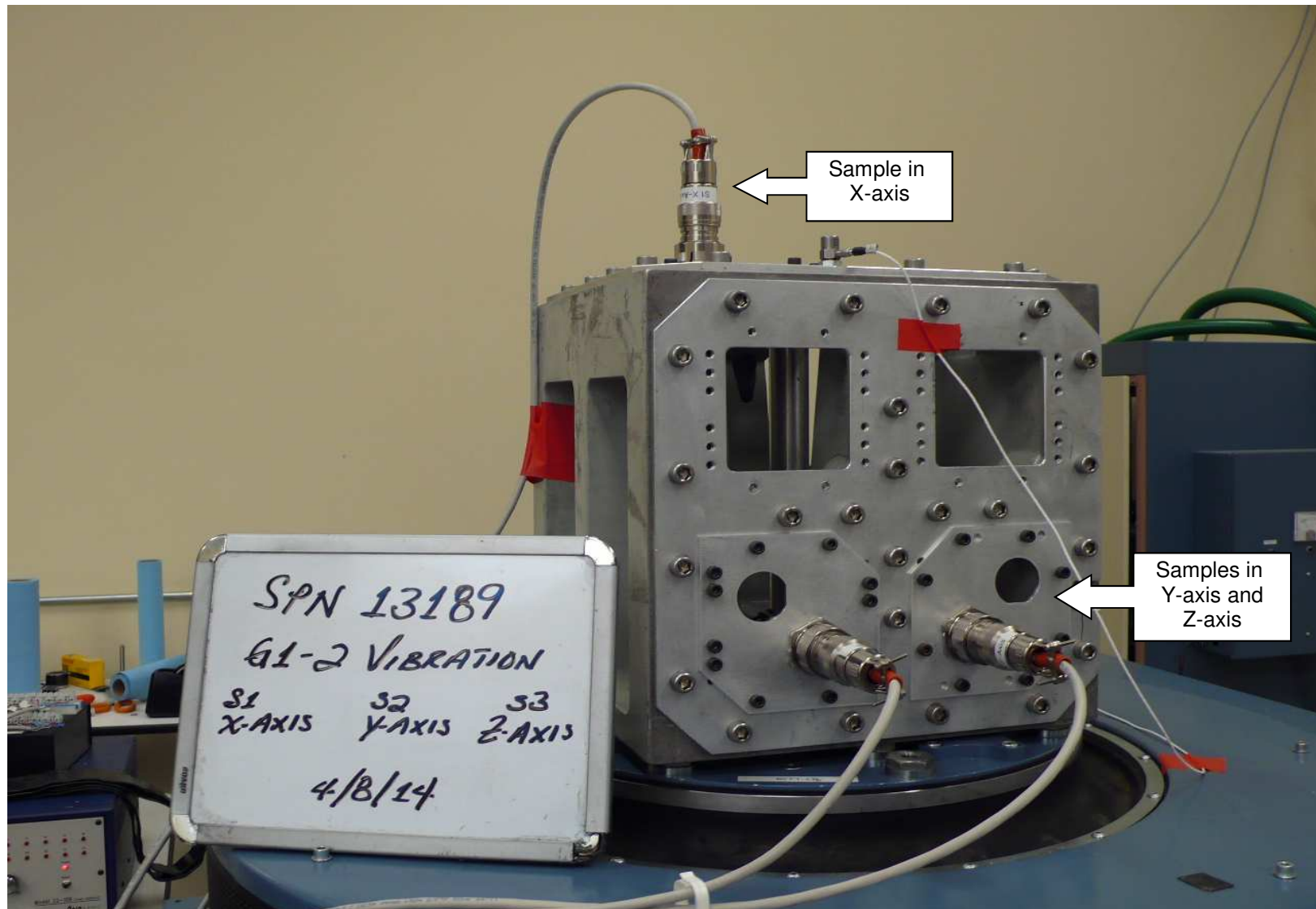
TEST RESULTS - Discontinuity Detector

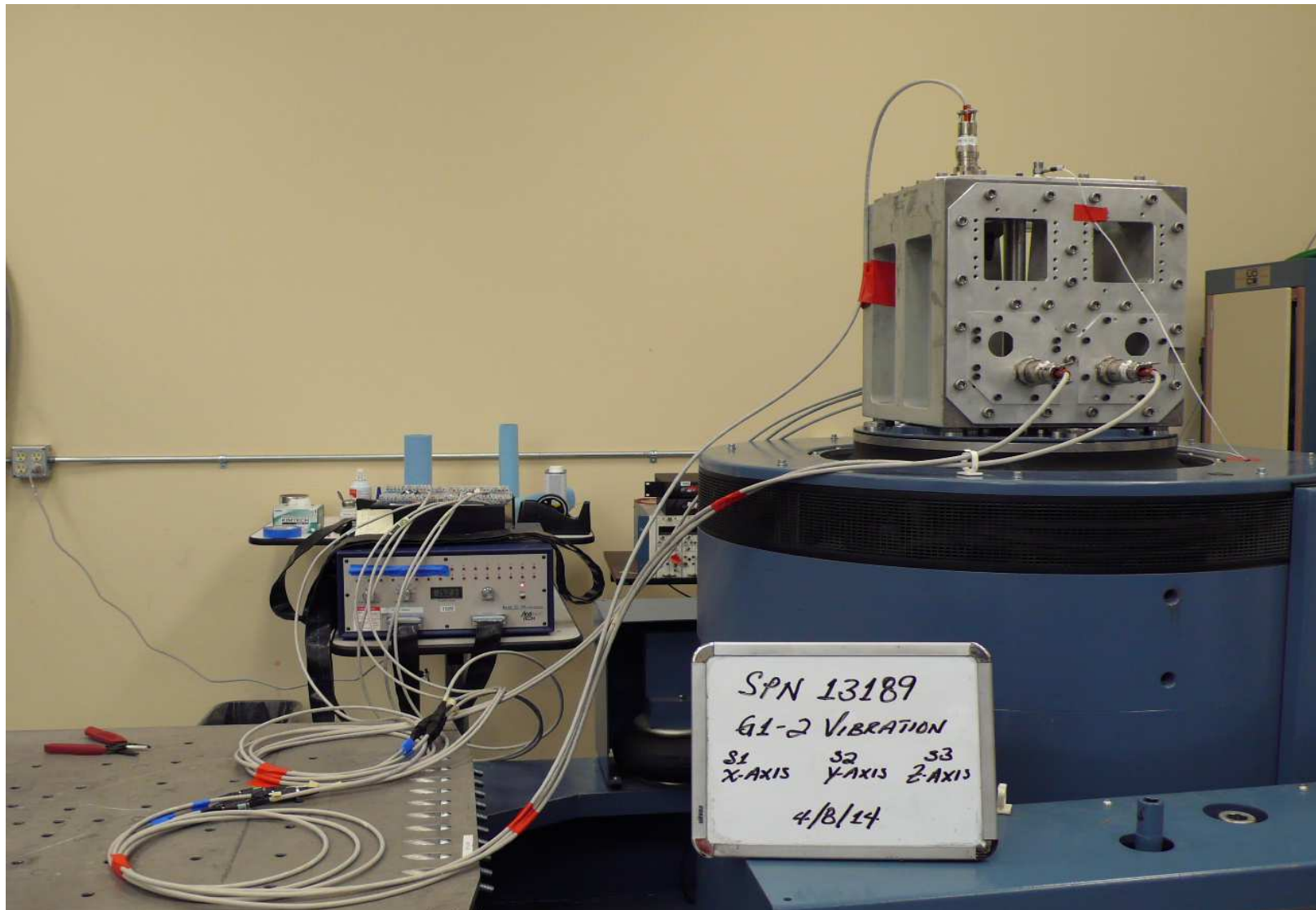
Sample #	Channel #	Wire color	X-axis	Y-axis	Z-axis	Sample Complies?
S1	1	White-orange	--			Yes
	2	Orange	--			
	3	White-blue	--			
	4	Blue	--			
	5	White-Green	--			
	6	Green	--			
	7	White-Brown	--			
	8	Brown	--			
S2	9	White-orange		--		Yes
	10	Orange		--		
	11	White-blue		--		
	12	Blue		--		
	13	White-Green		--		
	14	Green		--		
	15	White-Brown		--		
	16	Brown		--		
S3	20	White-orange			--	Yes
	21	Orange			--	
	22	White-blue			--	
	23	Blue			--	
	24	White-Green			--	
	25	Green			--	
	26	White-Brown			--	
	27	Brown			--	

Test Datasheet

Start Date	Completion Date	Customer Name	Purchase Order #	Service Project Number SPN	Test ID #	Temperature	Humidity	DS Revision
4/8/2014	4/8/2014	Glenair	S140673	13189	G1-2	23.1 °C	39.1 %RH	4/9/2014
Test Title		Test Specification / Standard		Specific Test Conditions		Measurements / Inspection		
Vibration		EIA-364-28F EIA-364-46B		Per EIA 364-28 Test Condition V, Letter E 16.9G Random, 10-2000 Hz Duration: 4 hours One DUT exposed on each axis (X ,Y, Z) simultaneously. Monitor discontinuity >1 microsecond		Electrical Discontinuity Acceleration (g) Frequency (Hz)		
Anomaly / Interruption				Nonconformity / Deviation				
None				None				
Test Sample Description		Part Number		Experior Test Procedure # (if applicable)			Customer Witness	
Ruggedized RJ45 Coupler connector (233-300 Series, Cat 5e Low Temp) Quantity: 3 mated pairs		233-300 Coupler Performance Test		Per referenced Test Specification / Standard			None	
Project Engineer	Performed By		Bench Cleaning	Equipment List	Post Test Cleanup	Setup Check	Event Log	Signoff by Technical Director
Gloria Zelaya	JB	Signoff	JB	JB	JB	GZ	GZ	john kim
		Date/Time	4/8/2014, 11:00 am	4/8/2014, 11:00 am	4/9/2014, 7:45 am	4/8/2014 1:20PM	4/9/2014	
	Checked modifier is set to 100%			Checked accelerometer sensitivity				
Signoff	JB			JB				
Date/Time	4/8/2014, 1:45 pm			4/8/2014, 1:45 pm				
Date	Time	Event Log						Initials

TEST SETUP PICTURES





ACCELERATION PROFILE



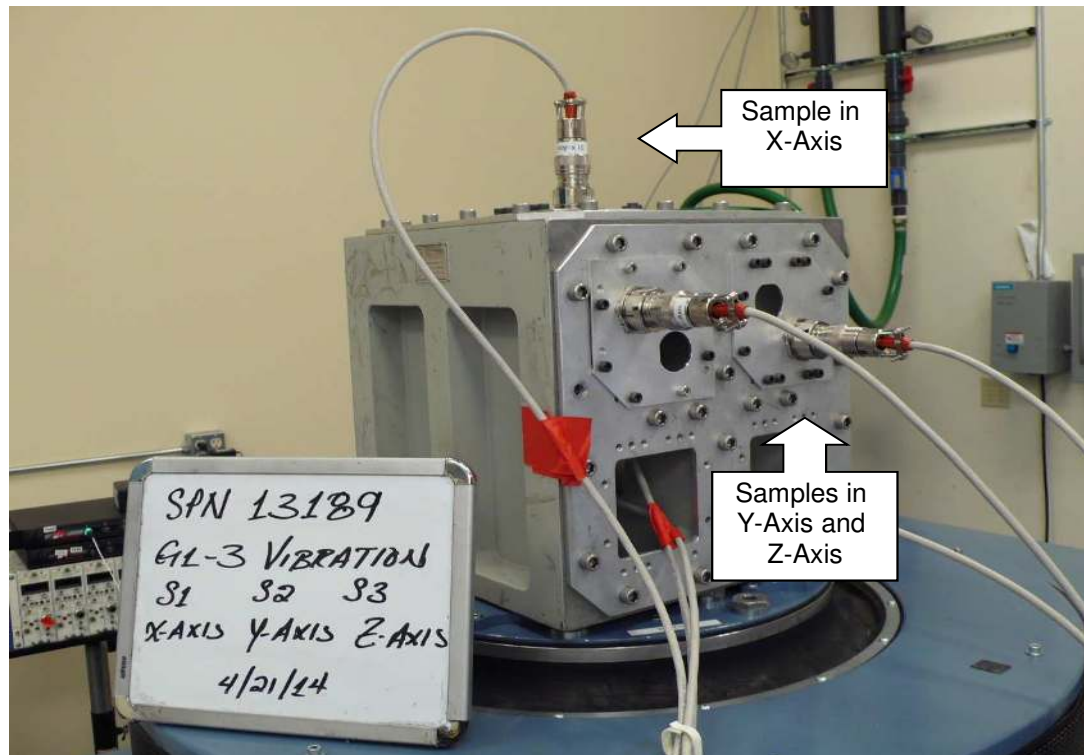
TEST RESULTS - Discontinuity Detector

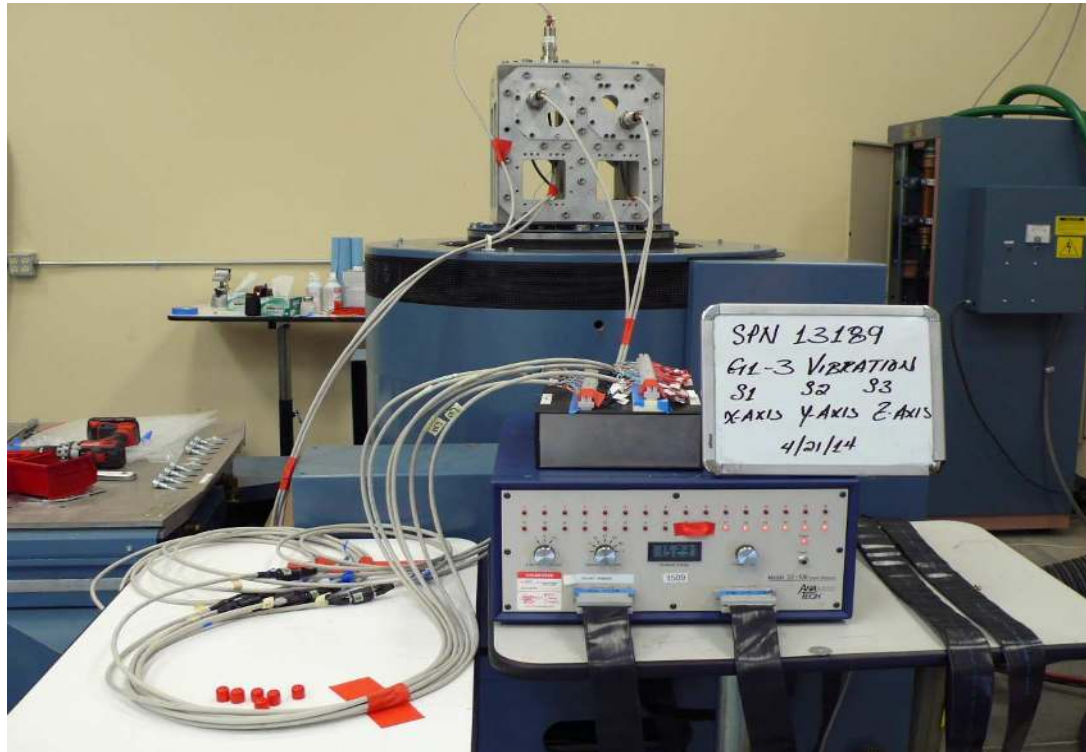
Sample #	Channel #	Wire color	X-axis	Y-axis	Z-axis	Sample Complies?
S1	9	White-orange	--			Yes
	10	Orange	--			
	11	White-blue	--			
	12	Blue	--			
	13	White-Green	--			
	14	Green	--			
	15	White-Brown	--			
	16	Brown	--			
S2	17	White-orange		--		Yes
	18	Orange		--		
	19	White-blue		--		
	20	Blue		--		
	21	White-Green		--		
	22	Green		--		
	23	White-Brown		--		
	24	Brown		--		
S3	25	White-orange			--	Yes
	26	Orange			--	
	27	White-blue			--	
	28	Blue			--	
	29	White-Green			--	
	30	Green			--	
	31	White-Brown			--	
	32	Brown			--	

Test Datasheet

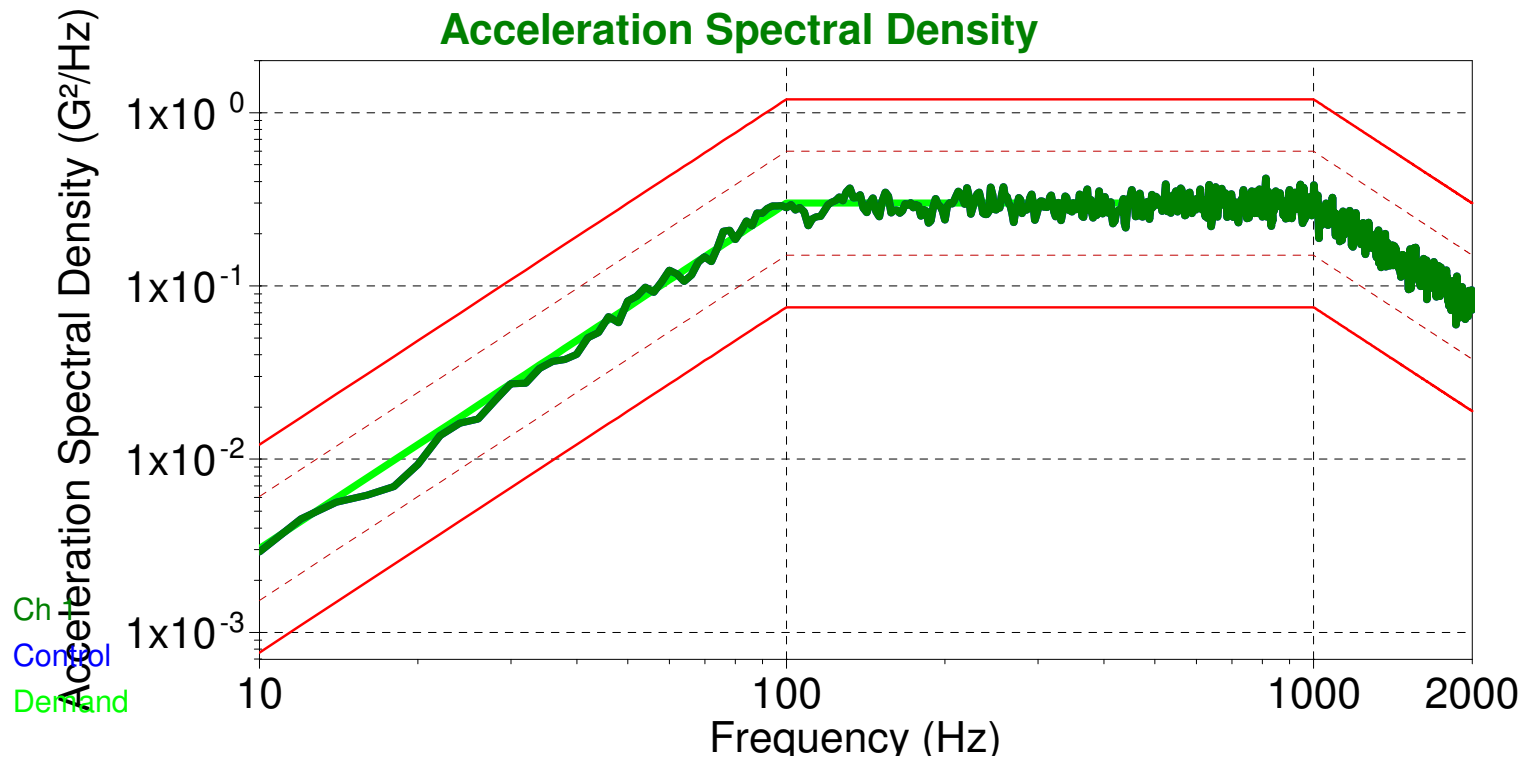
Start Date	Completion Date	Customer Name	Purchase Order #	Service Project Number SPN	Test ID #	Temperature	Humidity	DS Revision
4/21/2014	4/21/2014	Glenair	S140673	13189	G1-3	22.5 °C	56.9 %RH	4/22/2014
Test Title		Test Specification / Standard		Specific Test Conditions		Measurements / Inspection		
Vibration		EIA-364-28F EIA-364-46B		Per EIA-364-28, Cond. V, Letter F, 20.7Grms Random, 10-2000 Hz Duration: 4 hours One DUT exposed on each axis (X ,Y, Z) simultaneously. Monitor discontinuity >1 microsecond		Electrical Discontinuity Acceleration (g) Frequency (Hz)		
Anomaly / Interruption				Nonconformity / Deviation				
None				None				
Test Sample Description		Part Number		Exterior Test Procedure # (if applicable)			Customer Witness	
Ruggedized RJ45 Coupler connector (233-300 Series, Cat 5e Low Temp) Quantity: 3 mated pairs		233-300 Coupler Performance Test		Per referenced Test Specification / Standard			Tesfu Yohannes	
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		Date/Time	4/21/2014, 9:30 am	4/21/2014, 10:15 am	4/21/2014, 3:45 pm	4/21/2014 11:00AM	4/22/2014	
Checked modifier is set to 100%			Checked accelerometer sensitivity					
Signoff	JB			JB				
Date/Time	4/21/2014, 11:00 am			4/22/2014, 11:00 am				
Date	Time	Event Log						Initials

TEST SETUP PICTURES





ACCELERATION PROFILE



TEST RESULTS - Discontinuity Detector

Sample #	Channel #	Wire color	X-axis	Y-axis	Z-axis	Sample Complies?
S1	1	White-orange	--			Yes
	2	Orange	--			
	3	White-blue	--			
	4	Blue	--			
	5	White-Green	--			
	6	Green	--			
	7	White-Brown	--			
	8	Brown	--			
S2	9	White-orange		Discontinuity		No
	10	Orange		--		
	11	White-blue		--		
	12	Blue		--		
	13	White-Green		--		
	14	Green		--		
	15	White-Brown		--		
	16	Brown		--		
S3	17	White-orange			--	Yes
	18	Orange			--	
	19	White-blue			--	
	20	Blue			--	
	21	White-Green			--	
	22	Green			--	
	23	White-Brown			--	
	24	Brown			--	

