1. INTRODUCTION

1.1. Purpose

Testing was performed on the 0.80mm pitch Mini PCI Express & mSATA Connector to determine its conformance to the requirements of Product Specification 108-99102, Revision C2.

1.2. Scope

This report covers the electrical, mechanical, and environmental performance of the 0.80mm pitch Mini PCI Express & mSATA Connector.

1.3. Conclusion

The 0.80mm pitch Mini PCI Express & mSATA Connector meets the electrical, mechanical, and environmental performance requirements of Product Specification 108-99102, Revision C2

1.4. Product description

The 0.80mm pitch Mini PCI Express & mSATA Connector is designed for printed circuit board applications. The contacts are copper alloy, Gold plated on the contact interface and Gold plating on the solder tail, all over nickel under-plated. The housing material is glass filled insulating polymer, UL94V-0.

1.5. Test samples

Test specimens were randomly selected from normal current production lots, and the following Part numbers were used for test：

Test Group	Quantity	PN		Description
1、2、3、4、5、6、7、8、9、10、11	5ea.	2041119-*	4H	Mini PCI Express & mSATA Connector
		1775861-*	4H	
		1775862-*	5.2H	
		1775838-*	5.6H	
		2041262-*	6.8H	
		1759547-*	7.0H	

1.6. Qualification test sequence

Test or Examination	Test Group										
	1	2	3	4	5	6	7	8	9	10	11
	Test Sequence（a）										
Examination of Product	1,5	1,3	1,5,8	1,4	1,3	1,4	1,3	1,3	1,5,8,11	1,5,8	1,5,8,11
Termination Resistance (Low Level)			2,6,9	2,5		2,5			2,6,9,12	2,6,9	2,6,9,112
Dielectric withstanding Voltage	2,6										
Insulation Resistance	3,7										
Temperature rising		2									
Vibration(Random)			7								
Physical Shock				3							
Contact Mating Force					2						
Durability(Repeated mate/un-mate)						3					
Durability(Pro-conditioning)			3						3	3	3
Reseating									10	7	10
Solderability							2				
Resistance to reflow Soldering Heat								2			
Temperature Humidity Cycling	4								7		
Thermal Shock									4		
Thermal Cycling											7
Temperature Life (Heat Aging)										4	
Temperature Life(Pro-conditioning)			4								4

NOTE：（a）Numbers indicate sequence in which tests are performed.

Figure 1

2. TEST RESULT

GP	TEST	Requirement	TEST DATA				Judgment
			Max.	Min.	Mean	Std. Dev.	
1	Examination of Product	No abnormalities	PASS				ACCEPTED
	Dielectric withstanding Voltage	0.5 mA Max.	PASS				ACCEPTED
	Insulation Resistance	500MΩ Min.	PASS				ACCEPTED
	Temperature Humidity Cycling	No abnormalities	PASS				ACCEPTED
	Examination of Product	No abnormalities	PASS				ACCEPTED
	Dielectric withstanding Voltage	0.5 mA Max.	PASS				ACCEPTED
	Insulation Resistance	No abnormalities	PASS				ACCEPTED
2	Examination of Product	No abnormalities	PASS				ACCEPTED
	Temperature rising	30 ℃ Max	2.30	1.40	1.75	0.24	AC CEPTED
	Examination of Product	No abnormalities	PASS				ACCEPTED
3	Examination of Product	No abnormalities	PASS				ACCEPTED
	Termination Resistance (Low Level)	55 mΩ Max	30.94	21.73	23.86	1.83	ACCEPTED
	Durability (Pro-conditioning)	No abnormalities	PASS				ACCEPTED
	Temperature Life (Preconditioning)	No abnormalities	PASS				ACCEPTED
	Examination of Product	No abnormalities	PASS				ACCEPTED
	Termination Resistance (Low Level)	□R=20 mΩ Max	7.10	-5.00	-0.22	2.84	ACCEPTED
	Vibration(Random)	< 1 us	PASS				ACCEPTED
	Examination of Product	No abnormalities	PASS				ACCEPTED
	Termination Resistance (Low Level)	□R=20 mΩ Max	6.24	-5.73	0.28	2.43	ACCEPTED
4	Examination of Product	No abnormalities	PASS				ACCEPTED
	Termination Resistance (Low Level)	55 mΩ Max	30.66	21.44	24.14	2.54	ACCEPTED
	Physical Shock	< 1 us	PASS				ACCEPTED
	Examination of Product	No abnormalities	PASS				ACCEPTED
	Termination Resistance (Low Level)	□R=20 mΩ Max	4.50	-3.83	0.00	2.21	ACCEPTED

Figure 2（Cont.）

GP	TEST	Requirement	DATA				Judgment
			Max.	Min.	Mean	Std. Dev.	
5	Examination of Product	No abnormalities	PASS				ACCEPTED
	Contact Mating Force	2.3kgf Max	1.44	1.05	1.26	0.14	ACCEPTED
	Examination of Product	No abnormalities	PASS				ACCEPTED
6	Examination of Product	No abnormalities	PASS				ACCEPTED
	Termination Resistance (Low Level)	55 mΩ Max	35.10	26.78	30.56	2.21	ACCEPTED
	Durability (Repeated mate/un-mate)	No abnormalities	PASS				ACCEPTED
	Examination of Product	No abnormalities	PASS				ACCEPTED
	Termination Resistance (Low Level)	□R=20 mΩ Max	3.46	0.20	1.78	0.96	ACCEPTED
7	Examination of Product	No abnormalities	PASS				ACCEPTED
	Solderability	Wet Solder Coverage 95 % Min	PASS				ACCEPTED
	Examination of Product	No abnormalities	PASS				ACCEPTED
8	Examination of Product	No abnormalities	PASS				ACCEPTED
	Resistance to reflow Soldering Heat	No abnormalities	PASS				ACCEPTED
	Examination of Product	No abnormalities	PASS				ACCEPTED
9	Examination of Product	No abnormalities	PASS				ACCEPTED
	Termination Resistance (Low Level)	55 mΩ Max	25.77	11.14	18.60	3.79	ACCEPTED
	Durability (Pro-conditioning)	No abnormalities	PASS				ACCEPTED
	Thermal Shock	No abnormalities	PASS				ACCEPTED
	Examination of Product	No abnormalities	PASS				ACCEPTED
	Termination Resistance (Low Level)	□R=20 mΩ Max	2.29	-7.68	-0.68	2.45	ACCEPTED
	Temperature Humidity Cycling	500 MΩ Min	PASS				ACCEPTED
	Examination of Product	No abnormalities	PASS				ACCEPTED
	Termination Resistance (Low Level)	□R=20 mΩ Max	6.40	-8.17	0.69	3.34	ACCEPTED
	Reseating	No abnormalities	PASS				ACCEPTED
	Examination of Product	No abnormalities	PASS				ACCEPTED
	Termination Resistance (Low Level)	□R=20 mΩ Max	4.91	-8.00	-0.92	3.03	ACCEPTED

Figure 2（Cont）

GP	TEST	Requirement	DATA				Judgment
			Max.	Min.	Mean	Std. Dev.	
10	Examination of Product	No abnormalities	PASS				ACCEPTED
	Termination Resistance (Low Level)	55 mΩ Max	37.22	26.45	31.28	2.63	ACCEPTED
	Durability (Pro-conditioning)	No abnormalities	PASS				ACCEPTED
	Temperature Life (Heat Aging)	No abnormalities	PASS				ACCEPTED
	Examination of Product	No abnormalities	PASS				ACCEPTED
	Termination Resistance (Low Level)	□R=20 mΩ Max	4.23	-2.11	1.44	1.43	ACCEPTED
	Reseating	No abnormalities	PASS				ACCEPTED
	Examination of Product	No abnormalities	PASS				ACCEPTED
	Termination Resistance (Low Level)	□R=20 mΩ Max	6.89	-0.16	3.02	1.43	ACCEPTED
11	Examination of Product	No abnormalities	PASS				ACCEPTED
	Termination Resistance (Low Level)	55 mΩ Max	24.93	20.77	22.55	0.94	ACCEPTED
	Durability (Pro-conditioning)	No abnormalities	PASS				ACCEPTED
	Temperature Life (Pro-conditioning)	No abnormalities	PASS				ACCEPTED
	Examination of Product	No abnormalities	PASS				ACCEPTED
	Termination Resistance (Low Level)	□R=20 mΩ Max	7.48	-0.10	2.39	1.75	ACCEPTED
	Thermal Cycling	No abnormalities	PASS				ACCEPTED
	Examination of Product	No abnormalities	PASS				ACCEPTED
	Termination Resistance (Low Level)	□R=20 mΩ Max	8.45	0.00	3.46	2.21	ACCEPTED
	Reseating	No abnormalities	PASS				ACCEPTED
	Examination of Product	No abnormalities	PASS				ACCEPTED
	Termination Resistance (Low Level)	□R=20 mΩ Max	6.25	-1.78	2.66	1.89	ACCEPTED

Figure 3（End）