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1. Scope:

This Product Specification covers the requirement of GEN Z 2C cable assemblies on product performance, test methods and quality assurance provisions

2. Product Application & Features:

The GEN Z 2C cable assembly is designed for in the servers, Data storage, Workstation, etc.

Product Features:

- Provide 8 channels signal transmission as per industry standard.
- Data speed: support PCIE GEN4 16Gbps.
- Meet Gen Z and SFF-TA-1002 Specification.

3. Ratings:

Voltage Rating:	30 VAC /contact;
Current:	1.1 A /contact;
Insulation Resistance:	10MegaOhm;
Withstanding Voltage:	300V AC 1 minute ;
Durability:	25 cycles

4. Electrical Performance

Item	Description	Test Condition	Requirement
4.1	Low Level Contact Resistance	EIA-364-23 (termination of connector to board carrier shall be included in the measurements)	Refer to EIA-364-23, Table 5.4.2. LLCR Initial: 30mΩ Delta: 20mΩ
4.2	Insulation Resistance	(EIA 364-21) Testing by applying the specified voltage (DC 100 V) between adjacent contacts for one minute.	10MegaOhm Minimum
4.3	Dielectric withstanding voltage	(EIA 364-20) Testing by applying the specified voltage (AC 300 V Current leakage: 5 mA max.) between adjacent contacts for one minute.	No defect between adjacent contacts

5. Mechanical Performance

Item	Description	Test Condition	Requirement
5.1	Mating Force	(EIA 364-13) Measuring the required force for complete mated to the mated connector at 25.4mm/minutes.	SFF-TA-1002 56. 2N MAX

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5.2	Axial Latch Retention	Pull in direction parallel to insertion, hold for minimum of 60 seconds	50N, no damage
5.3	Durability (preconditioning)	EIA-364-09, perform 5 plug/unplug cycles	No evidence of physical damage
5.4	Durability	EIA-364-09 Engage and disengage the receptacle connector which is soldered to the test Board and its mating plug cable for 25 cycles at the speed of 25 ± 3 mm/minutes along the mating direction by the push-push machine	No damage
5.5	Mechanical Vibration	EIA-364-28 Test Condition D Random profile: 5 Hz @ 0.01 g ² /Hz to 20 Hz @ 0.02 g ² /Hz (slope up) 20 Hz to 500 Hz @ 0.02 g ² /Hz (flat) Input acceleration is 3.13 g RMS 10 minutes per axis for all 3 axes on all samples Random control limit tolerance is ± 3 dB Shock and Vibration board, Annex D	No damage No discontinuity longer than 1 microsecond allowed 20 milliohms maximum change from initial (baseline) contact resistance
5.6	Mechanical Shock	EIA-364-27, Test Condition A Trapezoidal shock 50 G, $\pm 10\%$ Duration 11 ms Velocity change 170 inch/sec, $\pm 10\%$ Three drops in each of six directions are applied to each of the samples Shock and Vibration board, Annex D	No damage 20 milliohms maximum change from initial (baseline) contact resistance
5.7	Latitudinal / Longitudinal Pull Force	25N applied perpendicular to mating interface. 360 degrees in 45 degree increments, beginning perpendicular to long end of the connector body.	-Monitor LLCR, no discontinuities - No damage - 20m Ω maximum change from initial (baseline) contact resistance

6. Environmental Performance

Item	Description	Test Condition	Requirement
6.1	Storage Temperature & Humidity	-20°C to +85°C degrees 80% Relative Humidity	None
6.2	Thermal Shock	EIA-364-32, Method A, Table 2, Test Condition 1, -55 °C to 85 °C, perform 5 cycles in mated condition	- No damage - 20m Ω maximum change from initial (baseline)

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6.3	Cyclic Temperature and Humidity	EIA-364-31B, Method III without conditioning, initial measurements, cold shock and vibration. Ramp times should be 0.5 hour and dwell times should be 1.0 hour. Dwell times start when the temperature and humidity have stabilized within specified levels, perform 24 cycles in mated condition.	- No damage - 20mΩ maximum change from initial (baseline)
6.4	Temperature Life Temperature Life (preconditioning)	EIA-364-17, Method A (without electrical load) Test Temperature and Test Duration per EIA 364-1000 Table 8 Test Temperature and Test Duration per EIA 364-1000 Table 9	- No damage - 20mΩ maximum change from initial (baseline)
6.5	Thermal Disturbance	EIA-364-1000 Cycle the connector between 15 ± 3 °C and 85 ± 3 °C, as measured on the part. Ramps should be a minimum of 2 °C/minute. Dwell times should ensure that the contacts reach the temperature extremes (a minimum of 5 minutes), humidity is not controlled; perform 10 cycles in mated condition.	- No damage - 20mΩ maximum change from initial (baseline)

7. High frequency Performance

7.1 PCIE 4.0:

ITEM	PCIE4.0
Rise time	40ps(20%~80%)
SDD21/SD12	f(GHz)≥-8dB 0.05≤f≤8GHz f(GHz)≥-12dB 8<f≤12GHz
SDD11/SDD22	0.05GHz~2GHz, -10dB Max. 2GHz~8Ghz, f-12dB Max. 8Ghz~12Ghz, -4dB Max.
NEXT	0.05GHz~0.12GHz, ≤-55dB 0.12GHz~12GHz, ≤-36.5+12.5xLog10(f/4) dB
FEXT	0.05GHz~0.15GHz, ≤-57dB 0.15GHz~12GHz, ≤-36+15xLog10(f/4) dB
SCD21	0.05Ghz~12Ghz, -18dB Max.
SCD21-SDD21	0.05Ghz~12Ghz, -10dB Max.
SCD11/SCD22	0.05GHz~12GHz, ≤(2/3)*f-20dB
SCC11/SC22	0.05GHz~12GHz, -2dB Max
Difference Impedance	Cable 85 Ω +/-10% Connector 85 Ω +/-15%
Delay	≤5.3ns

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Test Item 测试项目	Group (测试分组)							
	A	B	C	D	E	F	G	H
Examination of product	1,	1	1	1	1	1	1	1
Low Level Contact Resistance	2,7	2,6	2,4,6,8	2,5,7	2,5	2,5,7	2,5,7	
Durability(preconditioning)	3			3	3	3	3	
Durabilty Cycles	4			4				
Axial Latch Retention	5	5		6				
Longitudinal Force	6	4	7	9				
Mechanical Shock		3	5	8				
vibration			3					
Temperature Life					4			
Temperature Life (preconditioning)							4	
Thermal Shock						4		
Cyclic Temp and Humidity						6		
Thermal Disturbance							6	
Difference Impedance								2
SCD21-SDD21								3
SCD11/SCD22								4
SCC11/SC22								5
SDD21/SD12								6
SDD11/SDD22								7
NEXT								8
FEXT								9
SCD21								10
Delay								11
Sample QTY(PCS)	5	5	5	5	5	5	5	5

The number of group is test sequence 测试分组中的序号为试验顺序.

8. Test Sequence and Sample Quantity/测试顺序及样品数量