SFP-DD Double Density 1XN Cage

1. SCOPE

1.1. Content

This specification defines performance, test and quality requirements for the SFP-DD Double Density 1XN cage.

1.2. Qualification

When tests are performed on the subject product line, procedures specified in Table 1 shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

1.3. Qualification Test Results

Successful qualification testing on the subject product line has not been completed. The Qualification Test Report number will be issued upon successful qualification testing.

2. APPLICABLE DOCUMENTS AND FORMS

The following documents and forms constitute a part of this specification to the extent specified herein. Unless otherwise indicated, the latest edition of the document applies. In the event of conflict between the requirements of the specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the reference documents, this specification shall take precedence.

2.1. TE Documents

- 108-130026 SFPDD connector with cage specification
- 114-60027 Application Specification
- 501-60085 Qualification Test Report

2.2. Industry Documents

- EIA-364 Electrical Connector/Socket Test Procedures Including Environmental Classifications

2.3. Reference Document

- 109-197 Test Specification (TE Test Specification vs EIA and IEC Test Methods)

3. REQUIREMENTS

3.1. Design and Construction

Product shall be of the design, construction, materials and physical dimensions specified on the applicable product drawing.

3.2. Operating Temperature

-55 to 85°C

3.3. Performance and Test Description

The product is designed to meet electrical, mechanical and environmental performance specified in this paragraph as tested per test sequence specified in Paragraph 3.5. Unless otherwise specified, all tests are performed at ambient environmental conditions and are performed with connectors in fully mated condition.

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3.4. Test Requirements and Procedures Summary

Table 1

Test Description	Requirement	Procedure
Initial examination of product	Meets requirements of product drawing.	EIA-364-18.Visual examination and dimensional (C of C) inspection per product drawing.
Final examination of product	Meets visual requirements.	EIA-364-18.Visual examination.
MECHANICAL		
Durability	100 cycles for SFP-DD cage/connector, and 50cycles for SFP-DD Module, See note.	EIA-364-9. Mate and un-mate specimens. Include latching/release function as intended, Tested with multiple modules,12.7mm/min Max mating rate.
Mating force	40 N maximum for SFP DD module.	EIA-364-13, Measure force necessary to insert module into connector and cage at a maximum rate of 12.7 mm per minute, Latch disengaged.
Un-mating force	30 N maximum for SFP DD module.	EIA-364-13, Measure force necessary to extract module from connector and cage at a maximum rate of 12.7 mm per minute, Latch disengaged.
Compliant pin insertion force	Total insertion force 300N maximum for 1X1 cage, 667N maximum for 1X4 cage, 1000N maximum for 1X6 cage	TE Spec 109-41. Measure force necessary to push cage into the host board at a maximum rate of 12.7 mm per minute.
Compliant pin retention force	Total retention force 100N minimum for 1X1 cage, 150N minimum for 1X4 cage, 300N minimum for 1X6 cage	TE Spec 109-30. Measure force necessary to remove cage from the host board at a maximum rate of 12.7 mm per minute.
Cage latch Strength	91.2 N minimum. See note.	EIA 364-98. Apply specified axial load to latch at a maximum rate of 12.7mm per minute and hold for 1 minute to verify cage latch strength.
Rotational cable pull	33.4 N minimum without displacement of cage assembly from PCB, see note.	Load cable module into connector with cage assembly applied to PCB with attached bezel. Rotate cable 40 degrees toward PCB, and then rotate 360 degrees with the load still applied.
ENVIRONMENTAL		
Temperature life (preconditioning).	See Note.	EIA-364-17, Method A, Test condition 4. Test subject specimens mated to blank transceivers to 105°C for 72 hours.
Salt Spray	It doesn't occur galvanic corrosion on dissimilar metal. No crack, no deformation	EIA-364-26 / Method 101D, 48 hours

Table 1 End

NOTE
Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification and Requalification Test Sequence shown in Table 2.

Test Frames

Test-frames shall provide mechanical stability of the cage in relation to tis mating parts and shall cover the requirements specified in the TE Application Specification.

3.5. Product Qualification and Requalification Test Sequence

Table 2

Test or Examination	Test Group (a)			
	1	2	3	4
	Test Sequence (b)			
Initial examination of product	1	1	1	1
Durability	4			
Mating force	2,5			
Un-mating force	3,6			
Rotational cable pull	7			
Cage Latch Strength				3
Temperature life(Precondition)				2(c)(d)
Salt Spray		2		
Compliant pin insertion force			2	
Compliant pin retention force			3	
Final examination of product	8	3	4	4

NOTE

(a) *See paragraph 4.1.A.*

(b) *Numbers indicate sequence in which tests are performed.*

(c) *Precondition specimens with 20 durability cycles with latches engaged.*

(d) *Mated to blank transceivers (no components added to cable connector PCB)*

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification testing

A. Sample selection

Samples shall be prepared in accordance with applicable instructions and shall be selected at random from current production. Unless otherwise specified, all test groups shall consist of a minimum of 5 cages of which 30% min ports shall be tested.

B. Test sequence

Qualification inspection shall be verified by testing samples as specified in Paragraph 3.5

4.2. Requalification Testing

If changes significantly affecting form, fit, or function are made to product or manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of original testing sequence as determined by development/product quality and reliability engineering.

4.3. Acceptance

Acceptance is based upon verification that product meets requirements of Paragraph 3.4. Failures attributed to equipment, test set-up, applied customer components or operator deficiencies shall not disqualify the product. If product failure occurs, corrective action shall be taken and samples resubmitted for requalification. Testing to confirm corrective action is required before resubmittal.

4.4. Quality conformance inspection

Applicable TE quality inspection plan will specify sampling acceptable quality level to be used. Dimensional and functional requirements shall be in accordance with applicable product drawing and this specification.